

Moral Perspectives on Water Disputes

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Introduction:

The point of departure of this thesis is the Ganges water disputes between India and Bangladesh. The dispute mainly evolved when India constructed the Farakka dam on the Ganges river. The dam badly affects on various entities of the region, which includes nonhuman natural entities, the entire natural environment, socio-economic factors and so on. The case study is described in chapter 1. The information stems mainly from books written about this issue and local magazine- and newspaper- articles concerning the case.

The Ganges water conflict is an immense object of discussion. The conflict has various perspectives and can be discussed from the viewpoints of several disciplines, for instance, socio-economic perspectives, political, legal, etc. In the following I discuss only specific aspects of the conflict. One of them being the conflict of interests between the two countries, as each country estimates their interests from their respective points of view. A second aspect of the conflict concerns its effects on non-human entities as well as the entire natural environment. The third element of the conflict concerns the agreement between Bangladesh and India, based on what is claimed to be a just distribution of the Ganges water. This conflict evolves when Bangladesh point out that the country does not receive its due share of the water. I will identify these three aspects of the water conflict in the case study.

The thesis primarily focuses on these three forms of the water conflict as an object of philosophical discussion. I discuss the conflict from the viewpoints of western normative ethics or moral philosophy. Normative ethics primarily study an object of its discussion in two senses. One is known as consequentialism or teleological theories and the other is deontological theories. I discuss the basic line of difference between these approaches in chapter 2. In chapter 2 and chapter 3, I consider consequentialism as the main normative theory in the discussion, although it is possible to discuss these issues from a deontological point of view as well. In the discussion of consequentialism, we observe that it proposes different ways to attain the value or good and the characterization of value in relation to an object. One form of this is particularistic consequentialism which primarily consider that one should promote only his/her own good or interests. I discuss this approach in chapter 2. Another form of consequentialism is primarily concerned with promoting or attaining the value for all parties/members involved in a situation. This conception is also known as the universal account of consequentialism or utilitarianism. Within the discussion of teleological ethics, there is a holistic kind of teleological ethic or holistic ethic. This holistic ethic regards that the ultimate aim of an action is to attain the total good of a society or an object. I discuss

the corresponding relationship between utilitarianism and holistic ethic. The relationship provides a direction to characterize the holistic ethic as a wider sense of utilitarianism. There are different views in characterization of the utilitarian value, but it primarily depends on the identification of the object of value. I discuss this in chapter 3. I further discuss critical aspects of utilitarianism and I consider this in chapter 4. Utilitarianism primarily assesses a situation only from a single value account and it disregards other moral values in consideration of the right action and consequent state. This problem specially arises from the assessment of determining properly the distributive justice of some arrangement. This requires consideration of other moral value or values and utilitarianism does not provide such scope. With this shortcoming, I discuss beyond utilitarianism in the assessment of distributive justice. I discuss a consequent sensitive, but deontological account of moral pluralism concerned for the distributive justice of some arrangement. Moral pluralism estimates various aspects of determining properly the distributive justice of some arrangement. I illustrate this in chapter 4. These are the moral perspectives I use for the discussion of the Ganges water disputes. With these moral accounts, the main objective of this thesis is to examine closely the aspects of the water conflict and to consider a plausible solution of it. The discussion is reflected in the chapters of the thesis in the following manner:

Chapter1: In this chapter I discuss the water policy of India and Bangladesh based on the Ganges water from the viewpoint of each country's interests. The Indian interest evolves from construction and subsequently running the Farakka dam, which affects the interests of Bangladesh. Thereafter, I discuss the conflict of interests between the two countries and their certain attempts to find a solution of it in short term negotiations. Finally, the discussion evolves from the consideration that both countries accept a long term and just distributive agreement of the Ganges water, but without having any binding obligation. This non-obligatory situation evolves when Bangladesh complains that he/she does not get its due water share as per the agreement. Complain of improper implementation of the distributive agreement has made uncertainty regarding the solution of the water conflict.

Chapter 2: This chapter primarily discusses the maximization sense of interest or rationality of India and Bangladesh in relation to the Ganges water. The discussion follows the particularistic consequentialism of Hobbes. The justification of each party's rationality is required to meet the normative criteria, following from the viewpoints of individual's rationality. It is found that both countries do not meet the normative requirement of the choice situation. Further, I discuss each country's decision model with the normative requirement of risk-cost-benefit analysis (R.C.B.A). It appears in the discussion that this normative criterion is unable to identify correctly the risk involved with both countries' decision. This chapter identifies it as an inadequacy involved with the notion of risk-cost-benefit analysis. Finally, I

discuss the contract theory of Hobbes as a part of particularistic consequentialism. The discussion finds that the Hobbesian contract theory based on the maximization sense of individual rationality or interests is not a reliable view for finding a stable solution to the conflict between the two countries.

Chapter 3: In this chapter I illustrate the affect of the dam which brings serious problems for non-human entities as well as unexpected changes in the entire natural environment. I discuss the problem by using the non-anthropocentric account of the utilitarian moral argument, although my objective is not to defend the non-anthropocentric sense of environmental ethic. This utilitarian account of the non-anthropocentric discussion follows from moral status value and norm in view with the moral protection of the non-human individual entity as well as the entire natural environment or ecosystem. The discussion begins with Singer's sentient version of utilitarianism which offers only moral status value and norm in protection of non-human individual animals in the region. In discussion of the whole natural environment, I illustrate Callicott's interpretation of Leopold's informal account of the ecological view and its ethical aspects. Callicott interprets the moral aspects of Leopold's discussion with consideration of the feeling based ethical notion of Hume and Darwin which includes the whole environment into moral status value. Further I discuss the Aristotelian teleological ethic of holistic kind in a wider sense of utilitarianism with certain account of Norton. This wider sense of utilitarianism considers a moral norm consistent with the feeling based ethical value discussion of Callicott. This chapter considers that the moral norm offers an alternative general preservation policy for the entire natural environment or an alternative environmental policy.

Chapter 4: This chapter primarily addresses the problem which arises from improper implementation of the distributive justice of the Ganges water. In view of this problem, I discuss a combined notion of the capability approach and the functioning view in estimation of the individual's state related to the distributive justice of some arrangement. The combined notion follows Sen's account of informational based moral pluralism. This moral pluralism regards that morals values and norms are fundamentally important to determine the right assessment of distributive justice. In the discussion of value accounts, this moral pluralism goes beyond utilitarianism and focuses on other relevant values to determine properly the distributive justice of some arrangement. In poverty discussion it evolves that the nutritional characteristic of the river's water morally values the individual capability to function. I discuss the nutritional characteristic of water in determination of whether injustice lies in the distributive justice of the Ganges water. I further address the notion of freedom. In the discussion of the freedom account of individual's functioning, it evolves that deprivation of the equal aspect of freedom lies in the distributive justice. Finally, this chapter considers that injustice is involved in the right assessment of distributive justice following from the Ganges

water. This chapter urge to consideration for the normative principle of 'individual capability to function' and 'equal sense of freedom' in determining the morally defensible distributive justice of some arrangement.

Chapter 1: A case study of the water disputes between India and Bangladesh

“A river does not know any boundaries. What happens at its sources will reverberate all through its run until it reaches the ocean”.¹

Introduction:

Water is an essential resource for human life, as it is for any life. Accordingly, ancient civilizations grew up along the water ways in the near-east, in India, and in China. With scarcity of water comes also competition for it. Present population growth and various kinds of water based development projects are making this scarcity of paramount importance, and it lead to major conflicts. A number of water disputes have arisen in recent times between nations. These nations are making competing claims on the same river in order to fulfil their nation's requirement; for fresh water, for hydro-electric power, for irrigation, for waste processing, etc. Some examples are: conflicts over the water of the Nile between the countries of Egypt, Ethiopia, and Sudan. There are conflicts between Iraq, Syria and Turkey regarding the waters of the river Euphrates and of the river Tigris. There are disputes regarding the Danube's water between Austria, Slovakia and Hungary. There are disputes regarding the Ganges water between India and Bangladesh.² In this thesis, I shall consider the Ganges water dispute between India and Bangladesh. I shall use it as a case study and as a point of departure for a study of the moral aspects of this dispute.

Since time immemorial the Ganges water has played an important role for the people of its basin area. They have used it for their socio-cultural purposes, daily house-keeping and non-economic or small-scale economic activities. Over the past centuries, the people of this area have hardly felt to use the Ganges water for any large scale activities, due to the low density of the population, and to their simple life style. So, there was enough water for all, and no conflicts arose on that account. This was the case until recent times. Now, two factors have changed. Firstly, the number of people has risen sharply in the riparian countries along the Ganges, particularly in India and Bangladesh. And secondly, due to modern technology in

¹ Ohlsson, (ed.), 1992, p. 5

² Ohlsson, (ed.), 1996, p. 21

industry and in agriculture, the average demand for water, per person, has also risen. Due to these two determining factors, more water is needed now than ever before. The Ganges' flow is subject to great seasonal fluctuations. During its monsoon flow, June to October, there is enough water to meet the needs of the both riparian. However, during its dry season, January to May, its flow is insufficient to do so. Hence any major harnessing of the Ganges' water during the dry season upsets its natural equilibrium, which brings about a whole chain of interrelated repercussions.

Moreover, each country follows its own strategy for the use of the Ganges water, independently and unilaterally. As a result, each country determines and promotes its own interests, by drawing the maximum amount possible during the dry season flow in order to meet the requirements of their present and future purposes. The inevitable result of this is a conflict of interests between the two riparians of the Ganges. With this as a background, this chapter will chart the main events surrounding this conflict, until the recent negotiation which has taken place regarding the long-term sharing of the Ganges water between the two countries as a part of solving the conflict.³ More concretely, I shall concentrate mainly on the following issues: How did this dispute arise? What is the main root of this conflict? How has it persisted for more than four decades? And finally: Why has confusion arisen in the implementing of this agreement? Before touching on these issues, let me first give a territorial picture of the Ganges.

- The territorial picture of the Ganges:

The Ganges river is about 2,510 km long, and flows through both India and Bangladesh. It rises in Gangotri, on the southern slopes of the Himalayan range in India, and moves through Indian territory in a south-easterly direction towards Bangladesh. In India, the Ganges receives its waters from many tributaries. Of these tributaries, the Karnali, the Gandak and the Kosi are the most important. Together they contribute about 40% of the total flow and 70% of the dry season flow of the Ganges⁴. Before entering Bangladesh, the mainstream of the Ganges bifurcates into two channels. One is the Bhagirathi-Hooghly, which is the name of the Ganges in West Bengal, and the other is the Podda or Padma, as the Ganges is called in Bangladesh. The Padma, starting at the border between India and Bangladesh, flows for about 112 km, and then moves towards the south-east to join the Brahmaputra River in the heart of Bangladesh. The combined flow of these two rivers runs southwards to empty into the Bay of Bengal. In Bangladesh, the river receives one tributary, called the Mahananda. All of the other

³ The information I have assembled in this chapter is limited. It relates up to the period of June, 1997.

⁴ Jansen, Dolman, Jerve, Rahman, 1989, p. 40 and Ohlsson (ed.) 1996, p. 127-128

rivers of the Ganges are distributaries, taking off mostly from the right bank. The three principal distributaries are the Bhairab, the Borai-Madhumati, and the Arial Khan. These rivers, and their branches, form a maze of rivers - the Gangetic delta, which covers a vast area of the south-western part of Bangladesh. This geographical layout of the Ganges makes India an upper riparian country, while Bangladesh is situated as the lower riparian country.⁵

Throughout the Ganges basin area, it is assumed that there are currently about 260 million people who are directly dependent on the water from the Ganges. From this number, nearly 40 million people live in Bangladesh, while more than 200 million people live in India.⁶ In addition, there are a significant number of people in Nepal who are also riparians of the Ganges, and they consider the Ganges to be their main source of water.

- Background of the conflict:

The historical and cultural events of the Indian-subcontinent are important to the understanding of the Ganges water dispute. In 1947, Great Britain gave up its colonial rule after supervising the division of India into two independent countries. The division was made on the basis of religious identity. Pakistan emerged as a country dominated by Muslims while India became a Hindu dominated area. The new state of Pakistan consisted of two parts being geographically separated. Its eastern part was called East Bengal/East Pakistan; while its western part was called West Pakistan. These two parts were separated by a thousand miles of Indian territory. The partitioning of the subcontinent into India and Pakistan followed largely as a sequel to two important factors. One was the distrust between the Hindu and Muslim leaderships, which prevented them from reaching a consensus over the political future of the independent India. Eventually, the leadership became antagonistic to each other. The second was the communal riots between the Hindus and the Muslims, involving over the centuries horrible atrocities, which had taken place frequently in different parts of India. Ultimately it was proven that the Hindus and the Muslims were unable to live together. Thus, the way to the creation of Pakistan and India was paved. The hostility which had grown in the pre-independent period gradually eased, but it was not completely obliterated from the minds of the two communities, India and Pakistan. Therefore, the relations between the two communities remained strained. This new geo-political set-up and the mood of the two communities gave a new turn to the Ganges issue, in the days after independence.

⁵ Jensen, Dolman, Jerve and Rahman, 1989, p. 40 and Weekly Dhaka Courier, 26.5.95. vol. 11, Issue 43, "The River of Sorrows".

⁶ The number is changeable, as the number of people is increasing rapidly in this part of the world. This number has been taken from: Begum, 1987, p. 1, and the Weekly Dhaka Courier, 26.5.95. Vol.11. issue 43, "The River of Sorrows".

- India's plan to build the Farakka dam:

The making of the new geo-political boundary between India and Pakistan actually disturbed the existing integrated system of water use. Hence, a new strategy for water policy began in the sub-continent immediately after its partition. India undertook a systematic water development scheme, calculated on the optimal utilization of its water resources throughout the country. One of the main purposes of this plan was to expand the irrigation system to include not only normally cultivated land, but also the drought-affected areas. India had found that the expansion of its irrigation facilities would greatly contribute to the reaching of self-sufficiency in its food grain production, in spite of its overwhelming population growth. Along with the irrigation project, India also approved a large scale water development project in order to quickly improve the basic infrastructure of the country.⁷ Thus India constituted a systematic water policy, with the main purpose being to promote its own interests. Given the framework of India's post-independent water strategy, the country now needed an adequate supply of water. Accordingly, it began to investigate extensively its available water resources, in order to meet its objectives. India found that the Ganges water was its main source of surplus water and could be used for the maximal determination of its interests.

Accordingly, in the early 1950s, the Indian government undertook a plan to build a dam across the Ganges river. This decision was initially made due to India's need to solve navigational problems at the port of Calcutta by diverting the silt-free Ganges downstream towards the Baghirathi-Hooghly River, on which the port of Calcutta is situated. The port of Calcutta has been considered to be one of the busiest ports in India, providing access for a significant amount of international trade. Any deterioration of this port would have had serious consequences on the economy of India. The port had been experiencing a build-up of silt in the Hooghly river, which caused difficulties for the ships attempting to enter the port. In order to solve the problem, the Indian Government appointed an expert committee. The committee systematically investigated the problem, and made the decision to construct a dam on the Ganges as the only remedy for improving the Hooghly. It appears later that the dam contributed to its irrigation project as well.⁸ It is relevant to ask whether the committee made its decision on the basis of only this one option. The evidence suggests that the committee also touched on other options; however, there are some indications that these other options were not considered seriously.⁹ One option which was examined by the committee was called

⁷ Ohlsson, (ed.), 1996, "Hydropolitics", p. 124-126 and Begum, 1987, p, 230

⁸ Crow, Lindquist, and Wilson, 1996, p. 16- 19

⁹ Ibid. p.39-41

“A ship canal”, which would allow ships to avoid the most difficult reaches of the Hooghly. But the committee found that the ship canal scheme did not solve the siltation problem of the Hooghly. Therefore, it proposed that additional silt -free fresh water, diverted from the Ganges into the Hooghly, would not only “flush out” the siltation, but would also solve the navigation problem. This could only be achieved by constructing a dam. Moreover, the committee, after conducting scientific studies, came forward to assure that the dam project would not cause adverse effects in East Bengal.¹⁰ The arguments convinced the Indian government. In the mid 1950s the Indian Government accepted the plan. The building of a dam on the Ganges was accepted without any further opposition, and the dam project became the preferable alternative for India. In January 1961, the government of India officially announced that it was looking forward to the building of a dam across the Ganges River at Farakka. The dam was to be situated about 17 km upstream from the western borders of East Bengal, within India. The purpose of the dam suggests that it would not only accumulate water, but would also redirect a major portion of the water away from its traditional basin in East Bengal. The water was now to be led to Calcutta instead. Further on I shall describe what the consequence of the Farakka diversions for areas became further down the Ganges in East Bengal, despite India's assurance that the dam would cause no adverse effects. However, at first I will give an account of Pakistan's worries and objections regarding the effects of the project.

- Pakistan's reaction:

When Pakistan officially received the information about the Farakka dam, it wanted to discuss the building of the dam with India. Pakistan had worries concerning the effects of the project. In 1961, a high level meeting took place between the countries, where India proposed a close co-operation between the countries with regard to the matter. Accordingly, from 1961 to 1970, several talks were held to work out a solution to the dispute, but without result. Pakistan, in these exchanges of views, raised its opposition against the construction of the Farakka project based on what it claimed would be serious adverse socio-economic consequences for East Bengal. It appears that India gave little consideration to these objections.¹¹ And finally, in 1963 India unilaterally decided to start the construction of the dam. The dam was completed in 1970. Only the feeder canal of the dam was left, which was finished in 1974.

¹⁰ Ibid. p.56 and p.62-63

¹¹ Crow, Lindqist and Wilson, 1997, p. 60

The Farakka dam was constructed at a cost of approximately 240 million US dollars, and the dam with its associated works is 2,245 metres long. Another dam with a cross regulator was constructed across the Hooghly river at Jangipur, above the outfall of the feeder canal of the Farakka dam, to prevent the flood water from the Farakka dam from flowing into the Hooghly. A 42.5 kilometres long feeder canal was built at Halida and Farakka, taking off water upstream from the Farakka dam on the right bank, and falling into the Hooghly downstream of the Jangipur dam (See, fig. 1). The feeder canal was designed for a discharge of 40,000 cusecs (Cusec= one cubic foot per second) at its highest capacity.

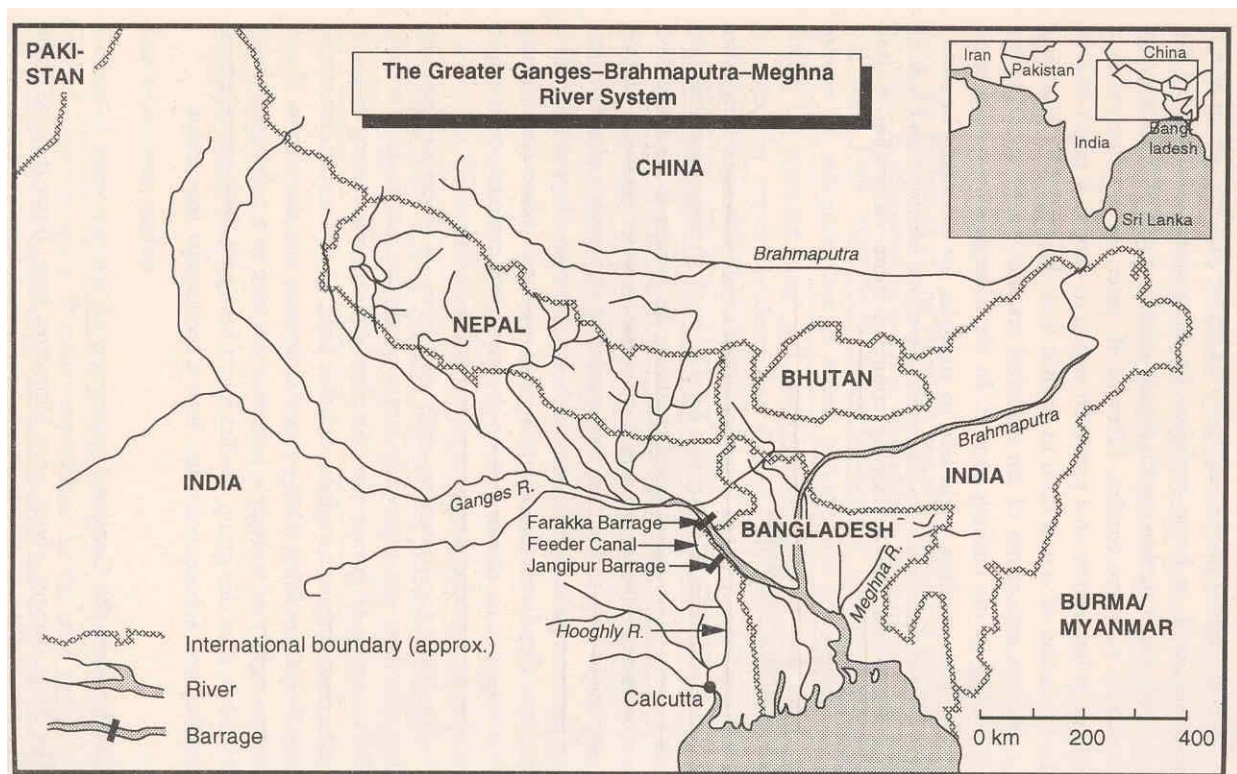


Figure 1: The Farakka dam and the river system of the region.¹²

- Bangladesh and the Ganges water dispute:

In 1971, the war of liberation broke out in East Bengal, and it ended in the creation of Bangladesh in mid-December. The secession of East Bengal/ East Pakistan as a consequence of the war, removed this conflict between India and Pakistan. Bangladesh, as an independent country, experienced the Ganges conflict in various ways.

¹² This figure has been taken from the book of Ohlsson, (ed.), 1996, p. 128. I have taken the description of the Farakka dam from the following: Islam, 1987, p. 3. And, the Weekly Dhaka Courier, 26.5.1995, vol.11, issue 43, "Farakka Barrage Fact Sheet".

The independent Bangladesh immediately made close ties with India, due to India's invaluable assistance during the war of liberation. After independence, the new Awami League government came to power in Bangladesh. Their gratitude towards India was at an unprecedented high level because of India's service during the liberation war. Hence, the Ganges water conflict entered a new dimension because of the warm and friendly relationship which had developed. Bangladesh accepted the existence of the Farakka dam and began to constitute its water policy on the basis of this. In return, India conceded in principle, that Bangladesh was a co-user of the Ganges. This friendly atmosphere pushed them into taking further steps in order to make a settlement of the dispute. In 1972, Bangladesh and India agreed to establish a Joint River Commission (JRC). The main purpose of this commission was to insure that the water resources of the region would be utilized on an equitable basis, for mutual benefit of the two countries.¹³ In 1974 and 1975, two significant agreements were made between India and Bangladesh. By virtue of the 1974 agreement, the Indian government agreed not to commission the Farakka dam without the consent of Bangladesh. And, by the agreement of 1975, the two countries agreed upon a provisional operation of the dam for only a period of 41 days, from the 21st of April to the 31st of May 1975. The agreement was to be terminated at the end of May, 1975, and so was called an interim agreement. Agreement on final commission and on continuous operation of the dam was in fact contingent upon their "arrival at a mutually acceptable solution". However, India could not manage to adhere to the terms and conditions that took place in the agreements of 1974 and 1975.

- Reasons for the conflict:

India did not stop, but rather continued the running of the dam after the dateline 31st May, 1975 without any consultation with or concurrence by Bangladesh. Despite this, it appears that the two governments were capable of finding a mutual understanding at that time, due to the friendly relationship between them. But this relationship and co-operation was suddenly interrupted. On 15th August, 1975 a military coup took place in Bangladesh and the President, Sheikh Mujibur Rahman was assassinated. The change of regime in Bangladesh reflected immediately on the relation between the two countries. The event brought on a breakdown of trust between them and it influenced the Ganges conflict greatly for a long time.

After the death of Sk. Mujib, Bangladesh fell into serious political turmoil which continued throughout the last months of 1975. At this point the Farakka issue was not so important to the people of Bangladesh. On the other hand, India continued its diversion of the Ganges

¹³ Crow, Lindquist and Wilson, 1997, p. 97-98, and Begum, 1987, p.231

through the dam in its full capacity. It is presumed that India's with-drawl of the Ganges water was continued in this measure until the dry season of 1976. As a result of the functioning of the dam, the water flow of the Ganges towards Bangladesh was significantly reduced for the dry season of those years. This reduction in flow caused wide spread and grave damage on agricultural, industry, navigation and ecology in Bangladesh.¹⁴ At the end of 1976 Bangladesh publicly objected to the Indian action in order to safeguard his own interest, and a conflict of interests developed between the two countries.

- The effects of the Farakka dam:

Bangladesh is a land of rivers. The waters of these rivers are considered as essential natural resources on which several important sectors of the country greatly depend, and the country is benefited by its water resources in a number of ways. The rivers have great contribution to increasing the country's agricultural production in order to meet the requirement of food for its increasing population. They play an important role in water development projects, and in maintaining balance in the country's ecological process. Unfortunately, the origin of many of its biggest rivers is situated outside of its border; mainly in India. The river Ganges is one of them, whose waterways occupy about thirty seven per cent of the total area of Bangladesh.¹⁵ Accordingly, the liveliness of this vast area significantly depends on the Ganges water. Given the immense role of the Ganges water, one can easily understand that the interests of Bangladesh would be affected as result of the Farakka diversion. A document called "White Paper on the Ganges Water Dispute" was published in Bangladesh where this issue is explained clearly.¹⁶ In this document the effect of the dam was estimated on the basis of the natural characteristics of a river system.

It was indicated that the most immediate consequence of the dam was that the water flow throughout the Ganges system was drastically reduced during the dry season period. This occurred especially in the south-western part of the country. The reduction of the Ganges water flow led the sea water (from the Bay of Bengal) to penetrate into the far inside water ways of the country. As a result of this the water quality was seriously declined by the increased salinity in the fresh water. An increasing of salinity and reduction of water flow to this extent are generally considered as very negative for a normal river system. So, the functioning of the dam not only caused harm for the agricultural and the industrial sectors or water projects, but it also disrupted adversely in the area of fishery, forestry, as well as to a

¹⁴ Crow, Linquist and Wilson, 1997, p. 124-125

¹⁵ Abbas A.T, 1984, p. 10, and Jansen, Dolman, Jerve, Rahman, 1989, p. 42-43

¹⁶ Crow, Lindquist and Wilson, 1997, p. 128

great extent the total eco-system of the region. Bangladesh claimed that the considered sectors were not capable of tolerating such increased amount of salinity. In addition to this, the mere existence of some of these sectors was seriously under threat due to the shortage of water. In connection to the ecological issue, Bangladesh gave major emphasis on the Sundarbans, an area located in the seriously affected south-western part of Bangladesh, which are the world's largest single tract of mangrove forest. The forest is famous for its rich tree, birds and animal life. Some of the wild life of the Sundarbans was already considered as endangered species, the Royal Bengal tiger can be cited as an example. Most of the forest species were not capable to adapt with this high salinity. Similarly, Bangladesh pointed out the reduction of a significant number of fish in the Ganges water ways due to the inability of the fish to tolerate shallow depths and the high level of salinity in the water. The fish "Hilsha" can be mentioned in this regard, as one of the species that have reduced in number. Bangladesh claimed that each of these elements is significant for balancing the whole eco-system of the country, and so the reduction of the Ganges water flow was to be blamed for the disruption of the normal ecological process of the country.

- Short term negotiations and stalement:

As mentioned previously, in order to safe-guard the country's own interests, Bangladesh publicly objected to the withdrawal of water by India. It was argued that the diverting of water after the end of the 41- days of provisional operation constituted a breach of agreement, and a conflict of interests arose between the two countries, Bangladesh and India. During the period of 1976, Bangladesh protested frequently in several forums. Simultaneously, Bangladesh tried to find a solution to the problem through bilateral negotiation, but all of these efforts turned out in vain. Finally, Bangladesh raised the issue within the United Nations. Lacking of enough support from the member states to deal with this conflict effectively in this international forum, Bangladesh returned again into bilateral negotiation with India.¹⁷ The result of this led to an agreement between the two countries for a five years period (1977-82). This settled the issue of sharing the existing Ganges flow, but it did not resolve the other important question of how the dry season's flows should be augmented.

Although both countries admitted that augmentation would offer a better solution to the shortage of water for the lean period, the two parties disagreed about the manner of augmentation. They came up with two different proposals, each mainly estimated from their own perspective of interests. Bangladesh proposed that the solution could be found within the basin of the Ganges by building reservoirs in the river's headwaters, primarily in Nepal. India

¹⁷ Ibid., p.110-111

rejected the idea, as the country did not like to involve any third party into the issue. India rather wanted to solve the problem according to the framework of its own water policy. As we have already pointed out earlier (see, p.4), India's post independent water strategy appeals to transfer surplus water into the location of deficit areas in order to meet the requirements of irrigation. Following this policy, the Indian government was concerned about the water shortages not only within the Ganges basin but also for other parts in India, and so wanted to meet the shortage in the Ganges by transferring water from the Brahmaputra River through a link with the Ganges. Accordingly, the Farakka dam would be used for harnessing the combined flow of the Ganges and the Brahmaputra for distribution and utilization in other parts of the country. It appeared gradually that the purpose of the Farakka dam was not only limited to the functioning of the Calcutta port, but also to use it in order to meet the demand of the overall Indian irrigation plan.¹⁸ In other words, India constructed the Farakka dam for multi purposes. Moreover, this became clearer when the Chief Minister of West Bengal, Jyoti Basu, expressed his scepticism about the scientific feasibility of the dam. He considered that the dam did not solve the problem to which it was originally intended for.¹⁹ Thus it was found that the primary objective of the Farakka dam was to serve water for irrigation. However, Bangladesh rejected the Indian proposal of transferring water from the Brahmaputra to the Ganges, as this would give India control over the other major rivers of the country as well.

Nevertheless, in this dead-lock situation the two countries managed to sign a Memorandum of Understanding (MOU) on sharing the Ganges water for two more periods, from 1982 until 1988, without further extension. These were, for certain conditions, less beneficial to Bangladesh compared to the treaty of 1977. Since then, that is after 1988 and in the absence of any agreement; India was diverting water through the feeder canal in its full capacity. This increased the damage to the environment of the entire south-western Bangladesh drastically. In order to be relieved from this situation, Bangladesh continued its efforts to bring India into the negotiation table.

- Long-term agreement and its implication:

In 1996, the political situation changed inside both countries. Deve Gowda, as the prime minister of a coalition government took office in India, while Sheikh Hasina as the prime minister of the Awami League government came into power in Bangladesh. The change of regime in both countries made a new opportunity for solving the conflict. After taking office, Gowda considered the Ganges issue sincerely. Moreover, Awami League's historic friendly

¹⁸ Begum, 1987, p. 62-70

¹⁹ Crow, Lindquist and Wilson, 1997, p. 228

relation with India, combined with the Awami League government's great efforts to use the current positive mood of the Indian government, made it possible to solve the conflict in short time. As a result of this, on the 12th December 1996 the prime ministers of the both countries signed an historic treaty on sharing the Ganges water in its dry season flow (January 1 to May 31). The treaty entered immediately into force with its signing, and will be renewable on the basis of mutual agreement at the expiry of the 30 year period.

The treaty was acknowledged by both countries to the extent that it ensures equality in sharing of the Ganges' dry season flow. The main elements of the treaty says that Bangladesh will either get a guarantee flow of 35, 000 cusecs or 50 per cent of the water, if its availability is 70, 000 cusecs or less at the Farakka point. That is; the considered quantity of water will be released for Bangladesh from the Farakka dam. The treaty further says that if the availability is 75, 000 cusecs or more, India will get 40,000 cusecs and Bangladesh the rest. If the flow falls below 50,000 cusecs at Farakka in any 10 day period of the dry season, the two governments will enter into immediate consultation in order to make adjustments on an emergency basis. This formula for sharing the water was worked out after taking into account the average water availability at the Farakka point over a 40 year period from 1949 to 1988.²⁰

Like any other international agreement, the effectiveness of the Ganges water-sharing agreement also depends on how it works out when applied. In the first year after completing the agreement, that is, in the dry season of 1997, Bangladesh appeared with a protest claiming that the country was not getting its due share of water as per the agreement. Bangladesh asked the Indian Government for information regarding the cause for the drop in the Ganges water flow at the Farakka point.²¹ The Indian government replied that due to natural causes (that is; slow melting of ice in the Himalayas and less rainfall) and withdrawal at the upstream of Farakka, it was hampered to supply adequate flow of water at the considered area.²² Bangladesh was not convinced by the intangible explanation offered by India, and pointed out that the water availability was calculated from the average of a 40-year period. Bangladesh further indicated that it was clearly mentioned in the treaty that India would make every effort to protect the flow of water at Farakka so as to stay in the 40-years average availability²³.

²⁰ I have taken the information regarding the treaty of the Ganges water sharing from two newspapers: The Daily Star, December 13.12. 96, "30-year historic water Treaty" and The Bangladesh Observer, December 13.12.96, "30-yr water treaty with India signed".

²¹ The Daily Star, 06.04.97, "Dhaka to seek explanation for in Ganges flow".

²² Ibid, 07.04.97, "Low flow at Farakka, says Indian team".

²³ The Daily Star, 28.04.97., "Non-implementation of Water-Sharing". And, The Daily Janakantha- a daily Bengali newspaper, 11.04.97., English translation of the headline; "Bangladesh urges India to maintain normal flow of the Ganges"

However, this "effort" does not bind India to any obligation in order to supply the water as per the agreement. This is why uncertainty remains, currently and in the future, as to whether Bangladesh will receive its due share of water or not.

Chapter 2: A consequentialist analysis (Risk-Cost-Benefit Analysis) from a particularistic point of view pertaining to India and Bangladesh

. . . each must view all other persons as in at least potential competition for the good(s) that she needs for survival or for greater well-being. But this creates in each person . . . struggle for scarce good(s). In this way potential conflict is converted into actual hostility, leading to the war of every man against every man, . . .

- Thomas Hobbes²⁴

Introduction:

What should be the main objective of human's action? How should the action be estimated? And finally, what should be the principle criterion for defining the rightness and wrongness of the action in a situation? These issues are highlighted in the discussion of normative philosophy. Normative philosophy however, focuses primarily on two distinct types of notions in defining the proper aspect of an action. One is known as the consequentialist approach and the other as deontological approach.²⁵ In the consequentialist tradition, the goodness or the positive aspect of the consequent assessment, addresses to the normative justification or the rightness of an action, while the deontological approach is primarily concerned with the right action itself in the first place, rather than estimating the outcome of it in a situation.

I shall examine the concerned issue regarding the Ganges water conflict between India and Bangladesh, according to the framework of the consequentialist view. The main reason for choosing this approach lies in the following. As we have seen in the case study, the water affects the well-being of each country in an essential manner, so the question is of central interest to both. The choice of each party's to promote their self interest or national interest, which has led to a conflict of interests between the two countries. Although the parties have attempted to find a solution to the conflict within the viewpoint of the maximizing version of

²⁴ See, Gauthier, 1986, p. 114 – 115 and, Tuch (ed.), 1991, Hobbes: Leviathan, chap. 13, p. 88 - 90

²⁵ The word "Deontological" is derived from the Greek word "Deon" for "duty" or "obligation", and its current term first appeared in the discussion of Broad, C.D. "Five types of ethical theory", published in 1930. See, Beauchamp, 1991, p. 171.

interests, this did not produce a conclusive or stable solution to the conflict. Is this really a justifiable decision? Can it be accepted? What would be the normative justification for it? How could it be explained? I find that these issues are significantly relevant to the discussion of the consequentialist approach, which provides adequate space for accounting the interest based or the goal oriented individual rationality.²⁶ In this sense, I shall attempt to analyse the conflict from two alternative points of view. In the present chapter, I shall focus separately on the rationality of each country in relation to the Ganges water. Thereafter, I shall examine closely a possible solution to the conflict within the given nature of individual's rationality. This will be considered as a particularistic consequentialist analysis. In the next chapter, I shall analyse the second aspect of the conflict concerning the environmental impacts of the dam which will be considered from the view point of universal account of consequentialism or utilitarian ethics.

A consequentialist approach is traditionally concerned with finding a purposeful factor or corresponding relationship between an action and its effect on a situation. A considerable number of philosophers take this relativist view as a key element in the discussion of normative philosophy. Nevertheless they explain it in various dimensions. Aristotle, for instance, considers that the main purpose of an action must be estimated in an objective sense and he insists not to take the situation into subjective consideration.²⁷ The Aristotelian view, however, do not correspond to the self-interested version of the individual's rationality, which we are concerned with here. Therefore, I am required to throw light on the view of other philosophers, who might be relevant for understanding the main text of this chapter. Accordingly, I consider the view of the modern English philosopher Thomas Hobbes (1588-1679), who has discussed comprehensively on interest based individual's rationality. His view suggests that the purpose of the individual's action or rationality is to promote self interest in response to a situation. I shall interpret this view in terms of particularistic consequentialism. In this way, I find that it is suitable to examine the respective interests of India and Bangladesh or their rationality in relation to the Ganges water.²⁸

The justification for each party's rationality will be regarded from the normative assessment of individual's rationality. In this regard, I understand this view as looking at whether each party properly meets the fundamental requirements of rationality in every step of pursuing the

²⁶ It is useful to mention here that the interest based individual's rationality can be considered in the deontological approach.

²⁷ Ross, 1998, Aristotle: The Nicomachean Ethics, Book I, p. 1-6, and Annas, 1993, p. 28- 29.

²⁸ It is essential to mention here that I shall closely examine the Hobbesian arguments. I shall also allow the views of other philosophers in this respect.

goal or the rationality.²⁹ We shall find that India neither satisfies the condition of consistency between the options in following the choice of preferring the Farakka dam, nor identifies the acceptable environmental risk in making a decision for implementing the project. In this respect, his personal quantitative assessment appear as controversial in relation to the characterization of risk, and biased in favour of implementing the decision, which do not satisfy the rational or normative standard of risk-cost-benefit analysis (R.C.B.A.). In this way, we shall find that the Indian rationality cannot be accepted according to the given standard. Bangladesh, in response to the Indian choice, initially considers a quantitative version of strategic choice, or equilibrium choice. We shall find that this consideration not only neglects the criterion of choosing freely, but also the preference of determining an exact quantity of water in sequences of situations. We shall further find that he fails to identify the acceptable risk by considering past risk objectively. His personal account of past risk, in this respect, appears not to correspond accurately to the identification of risk following from various events of the river's water, but is serving only his own purpose of decision for implementing the strategic choice, which is contrary to the rational criterion or normative standard of the R.C.B.A. Thus we shall find that Bangladesh does not satisfy the requirements of rationality, and therefore we are not sure that he will achieve the goal either. We shall finally find that the parties actually cannot achieve a possibility for a stable solution to the conflict according to the contract theory of Hobbes, as portrayed in the particularistic consequentialism. In this chapter I shall focus mainly on these given elements which can be arranged in the following manner: 1. I shall illustrate the view of the particularistic consequentialism. 2. I shall look separately at the interest of India and Bangladesh from their respective point of view. 3. I shall inquire into the possibility of attaining a durable solution to the conflict, in view of particularistic consequentialism.

A. What is particularistic consequentialism?

How to account for an individual's behaviour in a situation? Some philosophers in the English tradition take this issue as a prime factor and have attempted to explain individual's behaviour within the subjective assessment to the extent that a person itself is a centre for independent activity. Accordingly, the person can exercise behaviour freely according to his own judgement of whatever is in favour of his life. In other words, the philosophers actually value the person's independent behaviour, also identified as individualism. Individualism thus becomes a central factor in their discussion of understanding the behaviour of a person. On this account, the individual's behaviour poses some essential questions in response to an

²⁹ I borrow the conceptual aspect of the normative assessment of individual's rationality from the viewpoints of two philosophers. One is John C. Harsanyi who addresses this in Sen and Williams (eds.), 1991, p. 42 - 43. The other is Jon Elster and he discusses this in Elster (ed.), 1986, Introductory chap. p. 1- 2.

accountable situation: To what extent could the person examine the situation with reference to the state of his life? How shall he constitute the behaviour? What would be the main objective of the behaviour? What would then be the nature of the behaviour in order to achieve the objective? Among the English philosophers, we find that Thomas Hobbes (1588-1679) can be regarded as the first theorist who examines adequately the behaviour of an individual in the consideration of these issues³⁰. He discusses this in his famous book, called “Leviathan” published in 1651.

In explaining human’s behaviour, Hobbes firstly point out a natural state in which he finds that a psychological feature initially govern the behaviour or action in a situation. He further indicates that the human’s desire, as an expression of the psychological nature, urges a person to take initiative for an action, and the purpose of such act is directed straightforwardly to achieve his own good. As Hobbes expresses it:

. . . of all Voluntary Acts; the object is to every man his own Good;³¹

According to the above statement, Hobbes indicates that a person estimates action in the assessment of his own desire, and so then the achievement of his own good implies the satisfaction of the desire. Thus Hobbes points out that the psychological state of a person plays a great role in considering behaviour pertaining to achieve the good in a situation. The person estimates the achievement in a way that has great impact on the state of his personal life. Therefore he assigns subjective value to the action for having an instrumental role towards the state of his life. Accordingly, he considers that it is rational to behave in the manner which main objective is to enhance his own good or the good life. Hence the notion of the maximizing version of rationality is accommodated in the Hobbesian understanding of individual’s behaviour measured by the psychological state. However, the contemporary successors of the Hobbesian idea attempt to give less importance on the psychological state. Rather they emphasize estimating individual’s behaviour by focusing on the logical relationship between behaviour and the corresponding effect on the good. As a part of this assumption, they subsequently end up with interpreting the Hobbesian notion of the individual’s behaviour in a sense that the main purpose of every individual’s act is to maximize his self interest or his own good.³² In other words, the individual rationality is being referred to as the maximization of self interest.

Hobbes, however, did not confine his discussion regarding the individual’s behaviour simply by defining it in the purpose of achieving the goal or promoting interest. He further attempts

³⁰ Gauthier, 1990, p.2-3 (Moral Dealing)

³¹ Tuck, 1991, ch. 15, p. 105

³² See, Minogue, 1987, “Hobbes Leviathan”, Introduction; p. x, and Gauthier, 1990, p. 12

to explain it by stating that a person can identify precisely an object or objects in relation to his own good. He defines this in the following way:

. . . whatsoever is the object of any mans Appetite or Desire; that is it, which
he for his part Calleth Good.³³

What we actually understand from the above view is that a self-interested individual tries to find a state of affair or an object in relation to his action which contributes significantly to achieve the good. Accordingly, a rational individual looks for such an object (or objects) which is fundamentally relevant for reaching the objective. The rational individual estimates the object as instrumentally valuable for the purpose of calculating his action. Thus, a rational individual calculates the action in an instrumental sense, pertaining to achieve his own good or self interest. A rational individual, however, values the term “good” in a manner which can equally be evaluated in various ways in order to define the goal of his action. They are, for instance; utility, benefit, interests, well-being, welfare, happiness and the like. Nevertheless, the attribution of these values depends on how a rational individual interprets each of them in response to a situation.³⁴ In this way Hobbes and the exponents of his view understand the fundamental elements of the individual’s behaviour, suggesting that a rational individual considers an object in the constitution of his act and thereby he advances his interests. Hence, I consider the interpretation of the Hobbesian arguments based on the assessment of individual behaviour, as largely relevant for calculating the interests of India and Bangladesh, or their respective rationality in relation to the Ganges water. As we understand the self-interests of each country from their respective point of view, it is then conceptually not a mistake to pronounce it in more a colloquial term as “particularistic” instead of saying individualistic. Thus, I use the term *particularistic consequentialism* in the following discussion of the chapter. Moreover, I understand the term individual, person, agent, or party, in a collective sense such as a social group, company, a nation or the like.³⁵

B. An analysis of the Indian interests with regard to the Ganges water:

It has widely been believed that the recent technological innovation and its various manifestations have a tremendous role in improving the life-style or the well-being of the modern society. This idea might have encouraged India to intensify new efforts to estimate the Ganges water, not only in relation to the needs for a traditional or simple life-style, but in

³³ Tuck, 1991, “Hobbes Leviathan” chap. 6, p. 39

³⁴ Gauthier, 1986, p. 6 - 7.

³⁵ In most cases of this chapter I will avoid mentioning the name of a country. I shall instead refer to the country in terms of individual or person. However, in some cases I may consider to mention the name of the respective country, if the context of the writing claims me to do so.

order to pursue the well-being of its own, by a combination of modern technology and the natural water resource. This new assessment ultimately becomes a fundamental cause for re-examining the value of the Ganges water in accordance with the new design towards the satisfaction of the proposed goal. This is how India's national interest or rationality in connection with the Ganges water is shaped. Accordingly, India makes up his mind to constitute an act to the extent that it can substantially materialize the given expectation. Nevertheless he confronts a genuine problem in this regard. India is confirmed that using huge amount of the Ganges water will increase the national interests as much as possible, but he has not complete information regarding how to adjust the given notion into the framework of his action? Hence he faces a significant problem, or uncertainty in carrying out the rationality further. The course of uncertainty, however, lead him to a choice situation, through which he can find room for making a choice or choose an act for achieving the rationality. What would then be the possible action or choice? How can he choose it? I shall first try to answer the question of how the rational individual chooses the possible action. In a way it will provide us the answer of the second question, as well.

- A closer look at the Indian choice:

In a choice situation, the main purpose of a rational individual is to try to choose an action in a manner which ensures the right kind of corresponding relation in order to achieve precisely the expected goal.³⁶ In our considered case, I shall take this view into account as an essential standard of rationality, or the normative standard, in respect of defining how a rational individual should choose an action whose expected outcome actually promotes the well-being aspect of his rationality. In this respect, I shall mainly focus on the discussion of the contemporary philosopher and economist Amartya Sen, who has made extensive efforts to examine closely regarding a choice situation within the viewpoint of the well-being aspect of individual's rationality, or the well-being aspect of self interest maximization. As a part of such assumption, he points out three distinct features associated with the view of the individual's rationality.³⁷ One of these features suggests that a rational individual chooses an

³⁶ Elster (ed.) 1986, p. 1-2

³⁷ Sen examines the well-being aspect of self interest maximization or individual rationality in three distinct features: 1. *Self-centred welfare* 2. *Self-welfare goal* and 3. *Self-goal choice*. My main purpose here is to describe the three features according to the context of our current discussion, while bringing no fundamental change into the essence of each concept. Accordingly: 1. Self centred welfare, suggests that a person or an individual consider his welfare on the basis of his or her own consumption only (and in particular he/she does not like to involve any sympathy or antipathy towards others). 2. Self-welfare goal, implies that an individual's main target is to maximize his or her own welfare, given the notion of the uncertain situation in which he maximizes his expected goal pertaining to the welfare, after assessing the probabilities of his chosen action (and in particular does not involve directly attaching importance to the welfare of others). 3. Self-goal choice; suggests that each act of choice of an individual is guided immediately by the pursuit of his/her own goal (and in particular, it is not restrained or adapted by the recognition of mutual interdependence of respective successes, given other people's

action by estimating the consequence of it in a way which maximise exclusively his own *self-welfare goal* or self well-being goal, in a situation. On this score, I shall try to explain the Indian choice model pertaining to the Ganges water. Accordingly, the self well-being goal suggests that a rational actor is only concerned with the calculation of his own interests, and he thus disregards the others in order to promote his expected goal.³⁸ According to this assumption, he tries to follow the necessary means in order to choose an action, and the result of such choice leads to the achievement of the expected goal. Following this, I shall focus on how the person chooses the action from the viewpoint of the given perspective. Sen, in this regard, has made a great contribution in one of his most influential articles “Behaviour and the Concept of Preference”.³⁹ In this article, Sen examines comprehensively how an actor, in a choice situation, chooses an action by virtue of weighing a pair of options designed to satisfy his objective.⁴⁰ Why does the actor limit the choice within the criterion of two options? In which way does he choose one of them in order to satisfy his expected objective? And finally, does the choice really qualify to the requirement of the rationality? The first of these questions can be explained by the following three points.⁴¹

1. The rational individual or the actor is not inspired to search for several options, since it might create an intractable situation for him, having to compare effectively the consistent relationship between the various types of options. On this ground, his main purpose is rather as far as possible to be restrictive in selecting the number of options.
2. The rational actor will try to concentrate on the options which are easily accessible through the available information around him, and he thus qualifies the information by calculating its relevance for determining the expected goal.
3. The fundamental criterion for choosing an option is determined by the utility assessment of it. That is to say; the actor estimates the value of the options on the basis of their effective role and accordingly he considers that the utility is the only reliable standard in order to measure the rationality with regard to the object (i.e. the water resource).

pursuit of their goals or strategy or choice of others). I adopt the considered view of Sen by following: Westskog, 1996.1, p. 5, Sen in Elster (ed.), 1986, p. 75 and Sen, 1987, p. 80-88.

³⁸ It is useful to point out that the contemporary translator of the Hobbesian version of individual's rationality David Gauthier, understands the view of the considered choice model similarly and he describes it in the notion of the *Parametric* choice. Therefore, conceptually, the view of self-welfare goal is not significantly different from the view of parametric choice. See, Gauthier, 1986, p. 21.

³⁹ The article is actually published in the book “Rational Choice”, edited by Elster, 1986, p. 60-81. I shall also follow the arguments of other thinkers where it is needed.

⁴⁰ Ibid., p. 60-65

⁴¹ I have tried to formulate the three visions after considering Arrow, 1984, p. 55- 61 & Elster (ed.), 1986, p. 62-63.

The consideration of the above factors significantly influence the rational actor in delimiting the range of his options, but it does not necessarily imply that he reduces the number of options into a single one in his estimation of the choice situation. With only one option, there is no question of considering a choice situation. In this consideration for fixing the options, at least he comes close to estimate a pair of options, and then his main target is to choose the best one thereof, i.e., the one that can produce the greater expected utility. This is how we try to understand the way the rational actor is tempted to choose an action, from the viewpoint of two options. I shall now investigate the next issue regarding how a rational individual actually choose one of them.

In explaining a choice situation only from the viewpoint of two options, Sen considers a particular approach. This approach primarily considers a choice situation with reference to a condition of consistency between the two options. In a way, it suggests that a rational individual first chooses one of the two options, and then he attributes his *preference* on it. As an example this assumption indicates: If an individual chooses x when y is available. It implies that he first point out his choice over x and afterwards he comes on to adjudicate his preference for it. Sen describes that he reveals his preference for x over y. This implies that the individual reveals his preference pattern in the process of choosing one from the two options. This view is known as the theory of *revealed preference*.⁴² This notion further indicates that when an individual chooses x rather than y, then he must not reveal a preference for y over x. If he chooses x when y is available, then he will not choose y in a situation in which x is obtainable, no matter in which sense y is counted for. This can be formulated in the following form:

If x is to be chosen then y is not to be chosen
y is not to be chosen
Therefore x is to be chosen.

The crucial question emerges from the above argument; why is x to be chosen or preferred by the rational actor, but not y? The answer is normally reflected from the viewpoint of his

⁴² There is an important issue that generally appears in the application of revealed preference related to different situations. I find that it is essential to explain the issue in connection with the current context. Accordingly, it is customary to assume that the approach of revealed preference is only applicable to the market behaviour, and not necessary for choices in other situations. In relation to market behaviour, we find that the consumer can apply his choice on an unlimited number of options within his budget. And he can only purchase the goods which are observed in the market place. Thus we find that the basic elements of the consumer's choice is revealed in the market place, and called the economist's account of revealed preference. On the other hand, the individual's choice situation in our considered case, is only open in terms of the limited options as designed by the situation. Moreover, here his choice is only relevant to a particular object associated with the natural environment, and so the choice situation differs completely from the behaviour of the consumer associated with the market place. In addition to this, the essential factor is that the normative assessment plays a limited role in the market's choice, while the individual's choice in relation to the considered situation is essentially based in normative justification. Therefore, there is a clear distinction between studying the choice situation in terms of market and non-market behaviour, following from the notion of revealed preference. For further explanation in this regard, see Sen in Elster (ed.), 1986, p. 60- 66 and Gauthier, 1986, p.26-27.

rationality, which indicates that he estimates x in a way which guarantees that he obtains the greater utility needed in order to furnish the requirement of the possible expectation. Thus utility plays a key role in choosing x from the two options. In spite of this justification, how can he really be confirmed that x can satisfy the expected goal, or that it can produce the expected utility? In an effort to find an answer to this crucial question, it is essential for me to examine carefully the way he estimates his connected with the water resource, and then how he integrates the needs into a utility assessment for x . In other words, we find that the calculation of needs plays a vital role in estimating the utility of x .

- The role of needs in estimating the choice:

Given the background of choosing x , in which it is found that the utility assessment of x is implicitly contingent upon an estimation of the individual's needs, to what extent does the individual measure needs in connection with rationality? Does this make any difference from the traditional way of estimating needs? As a part of finding the answer of these issues, it is useful to follow certain arguments of Max-Neef (1991) given in his seminal book called "Human Scale Development". Here he describes two types of *needs*. One is individual's basic needs, or the traditional account of the individual's needs. The other is the well-being account of individual's needs.⁴³ In classifying the key distinction between the two aspects of need, he points out that every individual normally considers some needs in a manner of securing survival issues, as well as related to the fundamental activities in daily or social life. On this criterion, he characterizes them as basic needs or traditional needs. However, a person can change his estimation of needs in response to the requirements of a new situation. On this occasion, he re-examines needs in a way that goes beyond the range of traditional estimation, while calculating needs in relation to further opportunities pertaining to the development of activities which the well-being aspect of the rationality fundamentally rely on. Thus, the well-being aspect of individual's needs differs significantly from the traditional one.

Given the essence of the well-being account of the needs, the rational actor eventually find that there are valuable opportunities lying in the water resource, and therefore it is significantly important to redefine the needs in a way that is compatible with the well-being account of rationality. Thus it becomes an essential issue for the actor to choose or prefer the act whose utility assessment as far as possible satisfies the requirement of the well-being account of needs, and so for rationality as well. Hence, the considered account of needs plays a significant role in calculating the utility assessment. This is why the actor finds that he has a

⁴³ Max-Neef, 1991, p. 13 - 18. In this book Max-Neef primarily discuss the needs from the viewpoint of well-being or quality of life. However, in the flow of this discussion he also considers the basic needs. Thus, we find that he discusses the notion of needs in two different dimensions.

genuine reason for choosing x. In other words, the process of his preference order is primarily calculated on the basis of utility assessment, in which he finds that x is preferable. In this sense, we find the main reason behind India choosing the act of x, reflected finally in constructing the Farakka dam - a production of modern technology. Accordingly he regard the technological manoeuvre of the dam as significantly effective in order to pursue his expectation, or the achievement of the expected utility, from the Ganges water.

- The framework of rationality and the Farakka dam:

In the above discussion, I have tried to explain the background of the Indian choice of constructing the Farakka dam. I shall now inquire into the central issue: How can the choice be qualified according to the normative standard of rationality? In this process, I shall first look at the logical framework of *revealed preference*, whereby the choice has finally been composed. Accordingly, it indicates that the condition of consistency or the comparative relationship between the two options (i.e., x and y), must be followed carefully in evaluating the framework of revealed preference. Then a chooser can choose one of them.⁴⁴ I shall try to show that the considered requirement have not exactly been met when India prefers x from two options, or when an act is finally reflected by constructing the Farakka dam. For the sake of my claim, I shall once again state the relevant lines of the revealed preference, according to the requirement of the current context. One account suggests that the notion of revealed preference advocates a pair of options in a choice situation through which a choice has to be made on the basis of x. It further suggests that the individual rationality is primarily oriented towards choosing only x. Despite this fact, the key element of revealed preference is that the condition of the comparative assessment between the two options must be satisfied. Thereafter, one option finally has to be chosen. Hence, the most controversial question arises: Did India meet this criterion in making the choice of x, i.e. the dam? Before finding the answer to this question, it is useful to first look at a more basic and relevant issue in this respect: What does the condition of consistency actually suggest in the schema of revealed preference? The answer to this will pave the way to touch the former question.

The criterion of consistency or logical relationship between the two options has been calculated in the framework of revealed preference in the following sense: x is to be regarded at least as good as y. Once a person is setting the preference model upon it, then it appears: Either he can prefer x to y, or he can prefer y to x. Otherwise, he is indifferent to them.⁴⁵ In other words, the condition actually rules out allowing the relationship between the two

⁴⁴ See, Sen in Elster (ed.), 1986, p.62-63

⁴⁵ Ibid.

options to be non-comparable or unequal. Why then has the Indian choice of x turned into a controversial issue? For the sake of the current context, we can agree with the claim of the chooser that he gives preference to x because of holding a greater scale of utility.⁴⁶ This perception actually implies that he measures the utility assessment only for x, but not for y. One can reasonably argue according to the condition of the logical relationship between the two options, that if there is no place for estimating the utility for y, then it is equally not necessary to consider the assessment of the utility for x, neither. This sort of argument is genuinely persuasive, and so is justifiable in the given situation. Therefore, this argument cannot be ignored in a choice situation involving the criterion of the binary relationship, in which the viability of one is largely dependent on the other.⁴⁷ On the basis of such logical relationship, it appears that India has not exactly met the criterion of rationality in forming the choice of x, i. e. the dam, and therefore we cannot accept the choice according to the qualification of rationality, or the fundamental criterion of revealed preference. Thus, the Indian choice of constructing the Farakka dam turns into a contentious issue from the normative standard of rationality, or rational choice.

In the preceding section, I have been primarily concerned with the issue of the Indian choice, reflected in the establishment of the dam. I have pointed out why the choice cannot be acknowledged according to the standpoint of rationality. I shall now focus on the other essential factor in regard to the choice. This matter appears after constructing the dam project, but before launching it into further action. In this stage, the chooser considers that it is an important task to calculate the effectiveness of the dam, something which the expected utility largely rely on. A calculation of the functional activities of the dam is a crucial issue for finally determining the expected utility.

- An inquiry into the effectiveness of the dam:

India regards that the effective assessment of the dam largely depends on its possible good or bad affects on the water resource - an essential element of the natural environment. In other words, the chooser gives major emphasis on this information, because the activities of the dam will go against the natural flow of the river, which might lead to adverse effects on the environment. So the impact can somehow lead to become a factor of trouble for the safety

⁴⁶ In order to get information about India's choice situation related to the Farakka dam, see the relevant section of the case study.

⁴⁷ Arne Næss - a renowned Norwegian philosopher - considers a similar notion when he examines the comparative relationship between the two terms. I adopt certain parts of his argument in order to examine closely the logical aspect of the two terms consistency in relation to our considered case. For an extensive discussion in this regard, see, Carnap, 1950, p. 7-10.

of his current and future interests, resting in the same object. He faces, however, the problem that he has not sufficient knowledge to be able to measure the impact. What would happen if the dam is allowed to perform? On this consideration, he attempts to accommodate the information of the consequential aspects of the dam, as an inescapable part of the rationality. Accordingly, in searching out the effectiveness, he classifies this information into some factors which might be relevant for the realization of the project. What can actually go wrong as a result of the activities of the project? Does it really create an adverse affect on the delicate balance between the elements of the natural environment? How likely are they? How can they accurately be known? And, what should be the ultimate criterion in the calculation of implementing the project? In the light of the given facts, I shall attempt to examine closely the other feature of the Indian choice, or the effectiveness of the dam.

- Risk-Cost- Benefit Analysis (R. C. B. A) of the dam project:

As we have noticed in the above discussion, the actor actually does not know all the consequential facts of the project. Accordingly, the event of implementing the project becomes a risk taking situation. This realization further pushes him to estimate it in terms of the environmental risk, since the dam might have potentially dangerous effects on the natural environment. Moreover, this perception he even finds relevant for obtaining the expected utility or benefit, as well. It is then useful to regard the risk in a potential sense. Thus, this perception becomes a genuine issue for him in order to calculate scientifically the costly or risky events, so that it finally does not jeopardize or deprive him in attaining the expected benefit when setting the project in function. The indication urges him to collect the information that exactly characterizes the risk, and define whether the risk is on an acceptable level or not. The information will eventually approve him to go ahead with the project in the next step. Hence, a decision procedure truly emerges in connection with executing the project, as another crucial part of the proposed choice situation. In other words, he considers that a risky decision clearly emerge in attaining the possible benefit out of driving the project. Thus, he makes a trade-off between the analysis of the risk and the benefit of the situation. The gesture clearly corresponds to the approach which in the recent decades is known as *Risk-Cost-Benefit Analysis* (R.C.B.A).⁴⁸ This approach equally define that the risk associated with a project run by technological force, and its impact on the natural environment, can be a source of cost in estimating the beneficial aspect of it, unless the risk is being accurately

⁴⁸ Shrader-Frechette, 1985a, p.15. Some philosophers prefer to state simply “Cost-Benefit Analysis” (C.B.A) or “Risk-Benefit-Analysis” (R.B.A) instead of R.C.B.A. For such case, I find that the risk of disutility, or no benefit, is itself regarded as a cost. A reduction of risk/cost is similarly to be considered as benefit. This implies that risk and cost is to be evaluated in equal weight. On this consideration, we therefore find that R.B.A or C.B.A is conceptually an equal representation of the R.C.B.A.

calculated. The suggestion is therefore to examine carefully the events of risk, cost and benefit, before making a final decision to implement the project.

As we have perceived it, the main objective of R.C.B.A is to calculate systematically the information of risk or cost involved with the project, and find whether or not it actually outweighs the benefit of a situation. R.C.B.A attempts to provide potential information or aid to a decision maker in order to find a better decision for executing the project.⁴⁹ This account corresponds to the decision model of India, related to the dam. Therefore we allow the model of R.C.B.A as a normative standard in response to examine whether the Indian decision procedure has met the criterion in the consideration of performing the project. The problem nevertheless arises that the decision maker cannot estimate directly the risk, due to the fact that the considered information rests on the possible world. Accordingly, the decision maker is led to estimate them in consideration of a probability judgement. Thus the concept of probability assessment is inevitably integrated within the process of the R.C.B.A. This assumption, however, address a number of crucial factors which are related to each other, and therefore pushes the decision maker to count them in favour of making a safety decision: What would be the correct procedure to characterizes the probabilities of risk ? How can it be known exactly? To what extent does it influence on making the judgement of a decision? I shall closely examine the answers to this, through which I shall find that the decision maker cannot accurately count the probabilities of risk, and so he is not able to make a safe decision in relation to perform the project.

- The process of calculating the probabilities of risk:

In the process of characterizing the probabilities of risk, the main target of the decision maker is to estimate it so that he can determine accurately whether the considered assessment of risk lies on an acceptable level or not. He finds accordingly that he at least can assume a level of information whereby it is possible to quantify the probabilities, and finally he can come up to estimate accurately the risk. If he point outs, in the procedure, that there exists probabilities of unwelcome events, then the quantitative assessment of the relative likelihoods of these unwelcome events will eventually pursue him to determine the risk so. Accordingly, if he further notices that the result of the quantitative assessment of the probabilities exhibits that the risk is acceptable, or at least exists at a minimal level and so not being a source of significant concern, then he considers acknowledging it into the account of the expected benefit. In other words, if he estimates that the considered benefit is higher than the risk, the assessment will finally recommend him to adopt the decision of implementing the project.

⁴⁹ Shrader-Frechette, 1985b, p.29 - 34

The estimation can be formulated in this way: $b > r$ (“b” indicates here the benefit and “r” indicates the risk associated with the project). In this way the decision analyst constitutes the main part of his decision model in order to estimate precisely the probabilities of risk.

- Knowledge about the probabilities:

In the above paragraph, I have mainly been concentrated with the way the decision maker estimates the probabilities of risk as a fundamental part of his decision model. I shall now focus on the central element portrayed in the discussion of risk assessment, that is, how he can know exactly the probabilities of risk.⁵⁰ The word *probabilities* actually exhibits a plural sense of probability, which main task is to produce a degree of certainty or conformity regarding a particular event or a particular concept, after removing as much as possible the vagueness around it. The task is chiefly constituted by calculating a logical relation between a hypothesis or predictions of a particular event, and the result of the numerical estimation of some relative elements connected to that hypothetical event. In a way the process finally comes up with a result by claiming that it has reached a degree of conformity regarding the prediction or the hypothetical event. The numerical assessment plays an important role in the process, by providing a reliable basis for quantifying the probabilities accurately, since quantitative assessment is regarded in many cases as the most effective instrument for delivering a scientific basis for accepting an event or a thing without doubting it further. Thus probability assessment allows numerical estimation in order to identify the risky event accurately. I shall now attempt to focus on how the decision maker can know the probabilities. In this respect, we find that there are two ways through which it can be known: A. Frequency analysis, and B. Scientific theory.

- i. Frequency analysis:

Frequency analysis states that if a situation repeats itself with one out of a fixed number of states arising on each repetition, then the probability of the given state equals its relative frequency. Let me try to give one example in order to explain this clearly. Considering a case in which one tosses a coin consecutively and it comes heads half of the time. Estimating the event in this criterion finally forms a belief that the heads and the tails are equally probable.

⁵⁰ I follow primarily various aspects of the probabilities assessment of risk according to the discussion of Malnes. In this regard, he examines closely the effects of the interest-based criterion of human action on the natural environment and various sorts of uncertainties lying in such calculation. This assumption therefore permits me to consider his discussion in this respect. However, it is useful to state that I have no intention to be biased for or against any of his arguments in the context of this discussion. For my purpose, I consider his book “Valuing the environment”, 1995, chap. 3, p. 54 - 64.

The tossing of the coin then indicates the occurrence of the two states in which each state numerically represents a known probability of 0,5. The frequency analysis is a common method for estimating the probabilities of a particular risky situation or event (for example; certain kind of illness in different population groups, other countable affected groups of individuals, and so on).

- ii. Scientific theory:

Probabilities can also be estimated by following a scientific theory. This is usually done by scientists. They mainly collect information from frequency analysis or the events of the frequency analysis in order to constitute a theory. This theory can, however, be used in the estimation of probabilities of other events as well. But it cannot tell definitely anything about the probability of that event happening. The geologists, for instance, on the basis of a theory based calculation estimate the chance of whether a major earth-quake or an unusual natural catastrophe will occur in a particular place during the next five years. The probability of such an event happening is so small that it might be estimated in terms of a non-zero chance, or it might never occur in that place at all, since the place does not have the relevant relation to the event. This is why we find that a person, by virtue of the theory based calculation, may yield the estimation of probability of an event, but the event is unlikely to happen, or it may never occurred at all. The event may nevertheless be nomologically possible, given the viewpoint of the relevant theories or laws.

- Numerical estimates of probabilities and the characterization of risk:

Given the view of probability judgement in terms of frequency analysis, and the notion of the dependable scientific theories, it has been claimed that the decision maker can systematically quantify the likelihoods of relevant event or events, and with this knowledge he can finally determine the risk accurately. Despite the given fact, we shall find that there are many events or cases in the possible states of the risky world, where the risk assessor cannot assign numerical probabilities to them, and so is not capable of determining the risk accurately. As a part of this claim, I shall focus here on two forms of uncertainty in the quantitative probability assessment in order to evaluate the risk.

- The first form:

This is a type of uncertainty in which finding the probabilities of the states are feasible in terms of how likely they are. One may for instance know enough about one's colleague's

habits by telling that the colleague is more likely to be in the office than at the pub at certain hour. Nevertheless, this probability judgement is not enough for him to fix either state of his colleague's habits in numerical assessment. The reason is that he knows something about the differences between the two states of habit, but not enough to arrive at numerical estimates. It does not provide him with an exact picture or a critical standard in order to compare accurately one state with the other, which is regarded as an essential factor in order to put the event into the frame of quantitative assessment. Lacking the essence of such comparative relation between the considered states, he is not provided with accuracy regarding the probabilities of happening the states or the events following from the habits of that person. He may merely be confirmed that there exists differences between them, but he cannot fix these differences accurately. This is why he is not capable of determining the probabilities of the different states of his colleague's habits in quantitative assessment. With this example, we can equally say that the decision maker can know the probabilities of the different states of an incident, but he cannot exactly compare them and so he is not capable of assigning numerical estimation on them.

- The second form:

In the second form of uncertainty, one stands completely in a dark situation and is totally incapable of estimating the probabilities of a risky state or states. It implies that the range of possible states of the world is unknown. Given uncertainty in this form, the decision maker cannot undertake a relative frequency analysis, or he cannot use scientific theories in the purpose of measuring predictability or probability, since he has no knowledge of the nature of an event. Accordingly, there is no question of estimating the probability numerically. One example can be followed in this regard. A person finds a mushroom that he has never before tasted nor seen. So he cannot identify its taste in any respect, and has no inkling as to which condition is the more likely one to be. Therefore, there is no room for estimating any sort of relative likelihood, and so for applying a quantitative or comparative judgement regarding the event. With this example, we have tried to show that the decision maker cannot make any probability judgement in relation to a complete unknown event, or an unusual event in relation to the natural environment. He simply has information about possible uncertainty or an unknown event to go by, but he cannot infer anything recognizable from it, in the purpose of making a probability judgement on it.

- Subjective probabilities assessment of risk and the decision of performing the dam:

From the above, we have seen that there is no reliable way of quantifying the probabilities deriving from the viewpoint of frequency analysis or theory based knowledge, and so for characterizing the risk. The state of a complete uncertainty thus emerges before the decision maker. In other words, the decision maker could not manage to identify the probabilities of risk by the objective criteria of the R.C.B.A, so far. This does not necessarily mean that he cannot follow any other method in response to identify the probability as far as possible. What would then be a persuasive way to estimate the probabilities of risk in the decision model? In this situation, he attempts to find a favourable equation between the expected goal of his rationality and the uncertainty regarding identification of the probabilities. Accordingly, he comes forward to consider the probability assessment in the subjective assessment.⁵¹ Hence, he takes the assessment of risk and benefit associated with the project into the said account. The subjective assessment does not make any further barrier against finding a suitable relationship between the maximization version of his rationality and implementing the project. Thus he accommodates the subjective assessment of the probability judgement in the decision model. The credibility of subjective assessment is, however, a moot question. But before going to touch this issue, I shall first look at how the decision maker estimates the probabilities according to his own point of view.

Amid the consideration of the subjective assessment, the decision maker somehow finds a reliable basis for estimating the probabilities in numerical terms. The main purpose of such a process is to draw a critical level whereby he can accurately distinguish the probabilities of risk associated with the project in terms of being at an acceptable level or not. The process further suggests that if the probabilities of being deprived of the expected benefit manifest itself over the critical level, then it is not to be regarded as acceptable. While, if it manifests itself under the critical level, then it is not a source of concern for risk. The decision maker then defines the critical level in the sense that the probabilities of 10% (ten percent) or more than that, is not to be considered as an acceptable level of risk. In this process, he finally finds that the probabilities attached with the dam are below the given level of risk, and so it is not a potential source for risky effects on the natural environment. The perception equally provides him with certainty in obtaining the expected benefit as well. Thus the decision maker completes successfully the trade-off between risk and benefit, which favours the achievement of rationality or the expected national interests. Thus he eventually arrives at the decision of implementing the dam for achieving the goal of which it is built for.

⁵¹ It is essential to point out that subjective account of risk-cont-benefit analysis is not a part of normative assessment of individual's rationality.

However, an objection has been raised against the decision maker's view regarding the acceptance of 10% as a critical or acceptable level, because there is no persuasive way he can prove that the given level of 10% is the proper cut-off point. Does it endanger people or individual lives and health by deeming risks below this level insignificant? And, does it show insufficient sensitivity to desires by tolerating no risk above 10%? No one can answer positively to both these questions. Once we consider examining precisely the considered assessment, it implies that a 10% probability of one person's death is worse than 9% probability of 100 deaths. This is clearly controversial, and so is not acknowledgeable. The assumption further suggests that the main objective of the decision maker, in the considered process, is to distinguish between the acceptable and not acceptable level of risk by drawing the percentage, but he cannot do so accurately unless the assessment exactly corresponds to the number of individuals whose lives are at stake. The assessment, however, is not adjusted in this way. This is why there is a significant objection against the given assessment which cannot be ignored. Moreover, when we examine the decision maker's subjective assessment of risk and benefit analysis, it actually suggests that there is either risk or no risk of being deprived of the expected benefit. The reason is that the acceptance of the considered quantity assessment displays the decision analyst's own belief about the rationality, but is not addressing the characterization of the risky elements, which should be concerned. This has been significantly ignored. Therefore it permits us to insist that the subjective probabilities estimates cannot serve as a premise for rational decision making. However, the Indian decisions of implementing the project have raised some specific questions in relation to the Ganges water. Who will consequently bear the cost or the risk of such a decision? And, how will it affect on Bangladesh, whose interests largely lies in the same object? In finding the answer of these practical issues, it is also essential for us to shed light on the interests of Bangladesh with regard to the Ganges Water.

C. A closer account of the interests of Bangladesh situated in the water of the Ganges:

Before the functioning of the Farakka dam of India, Bangladesh would unrestrainedly be benefited by the Ganges water in various ways. It was not only limited to the individual consumption of human beings, but also for the purpose of cultivation, nourishment to the elements of the natural world, and different types of development projects, as well. This normal situation is no longer tangible, due to the dam project making a barrier on the natural flow of the water essentially required for those things. Bangladesh thus point out that the dam has severely affected his interests or the national interests relying on the water resource. The matter consequently has left him in an uncertain situation, in relation to the satisfaction of these interests. Hence a conflict of interests between the two countries or parties emerges over the issue of the Ganges water. In response to this situation, Bangladesh regards that the

fundamental task will be to find the way, so that he can pursue his own interests in the given situation. Accordingly, he too can successfully promote his possible well-being aspect of rationality.

- The Main objective:

In the assessment of his uncertain situation, Bangladesh eventually learn that achievement of the expected well-being version of rationality lies in the consideration of the other party's choice, through which he might pursue his own interests as well. Accordingly, a vital piece of information to him is how to accommodate the Indian choice or interests, in the framework of his own possible rationality or choice. In other words, Bangladesh finds that he has no other way but to interact with the other party in order to materialize the expected goal. Hence Bangladesh initially draws a strategy in response to the Indian choice, which is compatible with the expectation of his rationality. This assumption can be characterized as *strategic rationality* - the rationality is estimated by each party following the interaction of interests involved in a strategic situation.⁵² In other words, we find that the calculation of strategic rationality, or the strategic choice of Bangladesh, is significantly close to the view of the *Self-goal choice* version of well-being.⁵³ However, some key issues appear before the rational individual in relation to constitute the strategic rationality. How to coordinate or arrange the mode of interaction between his strategy or strategies with the other involved in the considered situation? What expectation should he rationally form from such coordination? To what extent should he constitute a possible strategic choice or action? Before touching this, it is worthwhile for me to illustrate some basic elements of the strategic rationality in order to understand the given issues.

- What is strategic rationality?

The strategic rationality is generally characterized by a situation in which two or more individuals interact or cooperate with their respective interests in a design where each individual can promote his own interests as a result of the cooperation.⁵⁴ In this process, the interests of each party are specified by the estimation of his own utility. The process then

⁵² Gauthier, 1986, p. 60-61

⁵³ Sen classifies the well being aspect of self interest or rationality in three senses. The *Self-goal choice* is one of them. The primary feature of this suggests that there is no restriction on a rational individual to accommodate the choice of other individual's in the formation of his/her own action or choice, if it permits him to pursue his own goal in a situation. For this purpose, see, note: 37 of p. 26, in this chapter.

⁵⁴ In general strategic choice might not be egoistic, but in this particular case egoistic.

allows forming a set of possible strategies or choices in which the party considers his strategy from his respective point of view. Thus the individual can constitute a possible strategic choice or an action subject to obtain his own expected utility within the combination of the other individual's choice, while the choice of the other individual can be regarded as constant in response to a situation.⁵⁵ Once we interpret this assumption alongside the strategic rationality of Bangladesh, it suggests that Bangladesh will first focus on his own expectation, measured by the utility function. Then he puts this information into making a possible choice or strategy in response to the Indian choice, i.e. the dam project, while the project itself is regarded as responsive to the satisfaction of the Indian expectation, or the Indian strategy, and so to be kept constant. This will characterize the possible strategy of Bangladesh in reference to the given strategic situation. But nonetheless, how can he successfully coordinate this strategy so that he can really promote the expected goal as far as possible? The answer of this question has adequately been discussed in game theory - an essential notion associated with the framework of the strategic rationality. I shall therefore address some of its relevant elements in the following discussion.

- Strategic rationality and the game-theoretic situation:

Game theory actually studies the various aspects following from a strategic situation, or strategic rationality, in purpose to find a possible strategic solution to the conflict of interests between the parties.⁵⁶ Accordingly, it describes the events of strategic rationality in two perspectives. One is *cooperative game* and the other is *non-cooperative game*. The cooperative game is a situation in which two or more individuals are involved, and it is primarily concerned with an agreement reached as a strategic solution to the game or conflict. I find that this assumption has no relevance to the current context of discussion, as we are mainly concerned with strategic rationality from the viewpoint of an individual's rationality which is not concerned with a strategic solution of the game. I will therefore go no further into this assumption. In contrast, the non-cooperative game considers strategic rationality from the viewpoint of a rational individual, and so only a self-enforcing agreement has any real chance to be implemented in the situation. I suppose that this assumption can be followed in dealing with the current issue.

Non-cooperative game theory can further be divided in two senses on a basis of the facts associated with the strategic situation. They are *constant sum* (also called zero sum) and

⁵⁵ Gauthier, 1986, p. 60-61

⁵⁶ I primarily follow the discussion of game theory from the viewpoints of two sources. They are: Elster (ed.), 1986, p. 8-10, and Harsanyi, 1980, p. 145- 146.

variable sum (or non-zero sum) games. The constant sum game is known as a game for pure conflict. The event can lead to a worse situation for all parties or players than any other outcome involved in the strategic situation. So this is unlikely to provide a strategic solution to the conflict.⁵⁷ Therefore we are not inclined to take the considered conflict into the given account, because each party involved in the case at least have no disagreement in respect to promote their interests. But nevertheless, they have the conflict on how to go about in accordance with their respective point of view. However, the variable-sum game is a game of pure co-operation or a game of mixed conflict and cooperation. The game of a mixed conflict and cooperation arises in a situation where each individual can consider the choice between a set of strategies that can either be characterized as cooperation or defection, depending on the attitude of the individual involved in the situation. Thus the variable-sum game provides at least a direction whereby a rational individual can make his own strategic choice in cooperation with the other, in a way that can lead to achieving the possible goal, and so is a strategic solution to the conflict. For this qualification, the event can be characterized as an internal rationality of cooperation, whereby a rational individual can promote his own goal with the cooperation of the other individual involved in the strategic situation. In other words, it appears that the given perception of non-cooperative game provide an account consistent with the notion of the strategic rationality. Accordingly, the considered version of non-cooperative game can be stated as an essential element in the discussion of strategic rationality.⁵⁸ This assumption then permits me to examine the strategic rationality of Bangladesh in view of the non-cooperative game or the assumption of the game theoretic situation.

As we understand from the above discussion, the main task of the game theoretic situation or the strategic rationality, is not only limited to account for the strategic situation in a manner of conflict of interests, but it simultaneously look for a rational cooperation between the parties. What then should be the main objective of this nature of cooperation? Its central property suggests reaching at a state of *equilibrium point*, or equilibrium choice.⁵⁹ Accordingly, each individual combines or coordinate the strategy with the other and finally it leads to the achievement of the equilibrium state. In other words, the parties involved in the game manage to coordinate their strategies in a manner of reaching the equilibrium point in which each party's strategic choice is regarded as optimal against the others. Once we put this assumption

⁵⁷ "The Prisoner's Dilemma" can be regarded here as a classic example which shows that the mutual defection produces a worse situation for both prisoners. For further reading in this regard, see Sen in Elster (ed.), 1986, p. 69-72.

⁵⁸ For such qualification, the variable-sum version of the non-cooperative game has been understood as a central part of the applied game theory. Therefore, in the following discussion I will consider this in the sense of the non-cooperative game or the game theory. In this regard, see Elster (ed.), 1986, p. 8-9.

⁵⁹ Ibid., p. 7

in relation to the strategic rationality or the strategic choice of Bangladesh, we find that according to this estimation, the equilibrium account of his strategic choice actually provide the expected utility maximally. So, he assumes that the choice corresponds to the best reply in relation to the other party's choice, or the Indian strategy. In this way, he regards the choice as in consistence with the equilibrium choice, or the expectation of the equilibrium outcome. The criterion further suggests that no one involved in the interaction can unilaterally increase his utility by acting differently. The gesture therefore indicate that the successful coordination, or the strategic rationality rests on the achievement of a possible equilibrium outcome, and that such outcome is to be regarded as stable. Thus Bangladesh initially shapes the strategic choice in response to the equilibrium choice. In other words, Bangladesh adopts the view to the extent that his strategic choice - a product of the internal rationality of cooperation between the two parties - virtually rationalizes the achievement of the expected rationality or the expected utility pertaining to the Ganges water.

Each party formally agreed to the objective of the strategic rationality suggested in the achievement of the possible equilibrium outcome - a rational solution to the game between the strategies of the two players or parties. In this regard, this can be asked: How can it actually be verified that the strategic choice of Bangladesh is itself rational? Or, can Bangladesh really achieve the expected equilibrium outcome as a result of the strategic choice? The answer to these questions cannot be known unless we have a closer estimation regarding the way he constitutes the framework of the strategic choice. I shall first cast light on the structure of the choice and thereby we shall find how to estimate whether he can achieve the goal. The normative justification of the choice lies in the following criterion of rationality. The choice must be accurately consistent with the expectation of the utility function or the expected utility of the party. I shall, however, find that the strategic choice of Bangladesh does not precisely correspond to the given status. Before reaching to this point, let me now try to look at how he actually arrange the relevant elements in constructing the strategic choice.

- An investigation into the strategic choice:

Although the parties have agreed to act upon the consideration of the equilibrium choice, this does not necessarily provide a definite situation for Bangladesh in order to achieve the main objective of the strategic choice. According to the framework of the strategic situation, he is not fully confirmed regarding the manner of co-operation with the other party, something which the achievement of the expected goal largely rely on. Therefore he assumes that uncertainty still exist in this regard. This impression seems further to induce him to account his choice on the basis of two corresponding elements:

1. The utility assessment or the utility function must be consistent with the requirement of various situations.
2. The assessment of utility must be conducted sufficiently by a precise standard, so that the utility of one situation can be measured correctly in comparison with the other.

Given the magnitude of the above two elements, the rational individual finds that it is not possible to calculate or adjust these elements within the limitation of a particular situation, or one situation responding in reference to the other party's behaviour. The choice situation then must be calculated in response to a sequence of situations, or in the consideration of various situations. This incentive accordingly urges him to take not only one situation, but more than one into account of the choice. It is therefore not sufficient for him to confine the choice model to the requirement of consistency only over a pair of options, and further preferring one of them by ranking them from greater to lower utility. Accordingly, the rational individual notes that the choice actually gives a partial or incomplete assessment regarding the state of affairs. The fundamental inadequacy lies in the fact that it does not allow other essential information exceeding the two options, or the one situation, which is a vital requirement for a complete assessment of the choice situation. It is therefore essential for him to allow this requirement which regards to take such essential information, or more than two options, into the account. Accordingly, the rational individual considers a choice situation in the sense that it must be at least consistent with the requirement of three situations in terms of utility assessment. He then realizes that it is reasonably useful to give value on that requirement. Thus, he accommodates it as a fundamental element in the assessment of his choice. In other words, the realization leads him to consider the choice situation in a broader perspective, so that he can adequately examine the essential options in respect to more than one situation or one case. A state of choice in accordance with this criterion is being known as *transitivity* in the discussion of the individual's rationality or the rational choice. This permits me to examine closely the choice situation of Bangladesh, in the light of the given criterion. What is then the criterion of transitivity? And, how can it be explained in accordance with given choice situation?

Transitivity is a condition which provides a scope for estimating a relationship between three options or objects in the realization for a choice situation. The three options can be stated by following a simple example in terms of x, y, and z. Then the criterion of the transitivity can be explained in the following sense. In the case of choice: If the relationship between the options is observed by the criterion of consistency, it appears they are indifferent. The event accordingly state: It regards x as at least as good as y, and y as at least as good as z, then x is

also regarded as at least as good as z. In the case of preference: The relationship implies that if x is preferred to y and y is preferred to z, then it is also regarded that x is preferred to z.⁶⁰

Let me now try to put the above information regarding the preference model of transitivity into our considered case. Accordingly, the rational individual considers the manner of preference in the sense of x to y to z. A transitive relationship appears between them in two sets, or two cases of preferences: x to y and y to z. A complexity then arises in this regard: Which one should he actually choose? And, how could he specify it? The main problem is that his preference ordering does not yield an accurate answer, since it is only limited to the two options and so does not reveal the strength of his preference for x to y in comparison with y to z. In other words, his preference order is actually not able to infer whether his preference for x to y is stronger than his preference for y to z. In order to reduce the difficulty, the rational individual regards that it is significantly important to allow an interval measure of preferences, in estimating the respective strength between them. This perception will not only give him an opportunity to measure the utility assessment for each case or situation by virtue of ordering the preference over the options, but also for determining the respective strengths of the preferences in reference to one situation compared with the other. Accordingly, he finds that the notion of the interval measure of the preferences bring forth a persuadable answer in response to the problems, as it has been raised in determining the relative strength of the preferences between the two cases. Thus he considers assigning value on the given notion of preference and so locates it in the chart of the strategic choice. Gauthier insists, after realizing the merit of the interval measure of preference, that the rational individual must allow this ideal assumption in the treatment of the strategic rationality.⁶¹

Once the vital role of the interval measure of preferences is acknowledged in realization of the transitive account of the choice, one immediate problem arises: How to figure out accurately the utility estimation for each situation or option? What should be a decisive factor? And, in which manner can finally the choice be made-up on the basis of that factor? In resolving this problem, the given criterion of choice is tempted to allow a precise standard, so that no one would be able to cast further doubt on its accuracy. Accordingly, it employs a quantitative assessment on each situation or option through which the utility can accurately be counted. Having considered the magnitude of the accurate assessment, the transitivity account then recommends that quantitative estimation can only ensure such estimation in response to the interval measure of preferences. And, so it is perfectly coherent with respect to the given event. Therefore it must be allowed in estimating precisely the utilities of those situations. The choice will accordingly be determined in a manner where a larger number echoes to

⁶⁰ I have primarily borrowed the conceptual aspect regarding the criterion of transitivity from the viewpoints of Sen in Elster (ed.), 1986, p. 63-65, and Gauthier, 1986, p.40- 42.

⁶¹ For more information regarding the view, see Gauthier, 1986, p. 60- 61.

maximal utility, and so the larger quantity will always be preferred compared to a smaller one, while equal numbers between the options or situations will be treated as indifferent.⁶² In other words, the utility is, for instance, determined by real numbers, in the way that if x is assigned to a greater number than y in a situation, x is preferred to y . And, if x and y are assigned to the same number; they are indifferent. This assumption will equally be followed for the cases of y to z and x to z . Thus the quantitative aspect of utility assessment contributes a precise standard in order to measure accurately the said preferences. The rational individual accordingly finds that this has a substantial role in measuring the given choice situation in the following way. The quantitative dimension will not only provide him with a reliable standard or unit in order to determine the accurate utility assessment for each situation or option, but also give a transparent calculation of the differences between the options, and so for comparing them as well. In other words, the consideration of the quantitative assessment serves as a unique solution to the problem, as it has been presented at the outset of this part of the discussion. Hence the rational individual assigns value on the quantitative aspect of transitivity, in the purpose of calculating accurately the utility in the interval measure of preferences.⁶³ He further pronounce the fact that the quantitative aspect of transitivity eventually will correspond to the exact figure of the utility assessment or utility function for each individual, and so is significantly consistent with the strategic situation as well. Bangladesh thus refer that his strategic choice has been consolidated accurately in response to the other party's choice, or the equilibrium choice, as it is highlighted by the interpretation of transitivity. In other words, we find that the conceptual aspect of transitivity is implicitly consistent with the ground work of the strategic choice of Bangladesh, whereby he is enlightened to prefer the option with the highest number, or the highest quantity of water in determination of the expected utility.

- Demerits of the strategic choice:

Given the credibility of transitivity in determining the choice, whereby the rational individual chooses or prefers a larger quantity compared to a smaller one, what happens if the rational individual finds that there is no noticeable quantitative difference between the options? In another sense, is it possible to apply quantitative assessment to all situations? In response to this question, we shall find that the quantitative version of transitivity cannot determine accurately the choice or preference in all situations, and that the event consequently can affect

⁶² Ibid., p. 40

⁶³ I suppose here it is worthwhile to state that these numbers have only interval significance. In addition, we must remember that a measurement of the interval comparisons of the preference is only calculated between utilities for the same individual. Therefore, the given measurement gives no further basis for interpersonal comparison. For this purpose, see Gauthier, 1986, p. 63.

negatively in reaching the equilibrium point. This can further disrupt entirely the transitive relationship of the preferences, which then cannot even be acknowledged in the fundamental discussion of rationality. Before touching these issues, it is useful for us to know how the rational individual considers preferring an option where the options appear with indifferent numbers. In facing with this event, the rational individual finds that there is no apparent scale where one option differs from the other option (or options), or apparently there is no significant differences between them, due to having the same number. Hence, the quantitative version of transitivity simply fails to compare the options in determining the choice. Despite this fact, it does not necessarily imply that the event completely refrain him from preferring one option or number. As he follows the requirement of transitivity, he is incited to prefer the x . No matter whether it is a case of two options or a set of three options, he must prefer x . Otherwise, he regards that he actually violates the manner of preferring the x , according to the said requirement.⁶⁴ Therefore he always prefers the x , even though there are no quantitative differences between this and the other options, in every case or situation. Accordingly, each successive situation is evaluated similar to the other. Then he finds for instance indifference between the two situations X_1 and X_2 , between the X_2 and X_3 - - - between the X_9 and X_{10} , and so forth. Even though there is no doubt here regarding the manner of considering his transitive preference for the X_1 to the X_{10} , there will, however, always exist a small difference between the successive x 's, and once these small differences are summed up together there obviously emerges a greater number, for example; counted as 10,000 cusec water. And this greater number or huge quantity of water cannot be ignored. The number clearly indicates that the rational individual is genuinely a loser for preferring the x . Moreover, this is not only a problem that creates a worse situation for the chooser, but there are other fundamental problems, too. That is the similarity among the preferences or numbers which is actually not a concern for the transitive relationship. Instead, the fundamental objective of the transitive relationship is concerned with figuring out the comparative relationship between the numbers, in order to determine correctly the preferable option. As we have seen, this is actually not the case in the situation of the same number. Thus the quantitative version of the transitive preference fails itself in relation to the criterion of the comparative relationship in dealing with a situation of the same number. Therefore it cannot determine exactly the option preferred for achieving the expected utility in every situation.

Once the quantitative version of utility assessment fails to maintain the criterion of the transitive relationship, the options then can no longer be regulated in the manner of the relationship. Consequently, the objects of the preferences are led to break up into an intransitive or a cyclic relationship.⁶⁵ The relationship accordingly appears in the following

⁶⁴ For more information regarding why a rational person must choose x , but not other; see Sen in Elster (ed.), 1986, p. 64 - 65.

forms: x to y , y to z , and z to x . We can, for instance, examine: What happens if the rational individual considers making the choice on the basis of such a relationship? In response to this question, we shall find that the choice over the options of the cyclic relationship will violate the individual's rationality to such an extent that it cannot be acknowledged as sensible in the discussion of rationality. On this account, I shall draw the options of the said relationship into numerical estimation, so that this claim can be brought out clearly. Accordingly, suppose that the rational individual has x . Before he takes it into the account, the other party offers him z ; he prefers the z instead of x . If he prefers z to x , it is then presumed that he is offered more than the x in return for the z . Supposed he is offered 1000 cusec water for z and so trades. And similarly, suppose he has the z , but he is offered 1000 cu. for the y . He prefers the y and so trades. But before he takes the y into the account, 1000 cu. is offered for the original x . He prefers the x and so trades. After serving the three events of preferences, in each of which the rational individual expects that the event betters his situation in terms of his preferences. Nevertheless, he himself ends up with the original x , but appears a loser of 3000 cu. water out of summing the three preferences. Clearly the events provide opportunity for a tactic in making for further advantage to the other party who can even continuously be a gainer as result of using the unending round of such preferences, while the chooser can become ever less well-off, because of being engaged with the choice over such relationship. Thus we find that the choice over the cyclic relationship of preferences eventually goes contrary to the main objective of the individual's rationality. In other words, we can argue regarding the quantitative account of the strategic choice, following from the viewpoints of the transitive and the intransitive relationship of preferences, that the former relationship cannot genuinely reach the equilibrium point in the situations, nor can even the consideration of the later relationship have any sensible role in the discussion of the individual's rationality.

- Limiting the freedom:

In the preceding section of the discussion regarding the strategic choice of Bangladesh, we note the remarkable defects associated with the quantitative form of preferences in response to various situations. The event makes it significantly difficult to quantify an exact preferable option and eventually it appears contrary to the fundamental objective of the individual rationality on which the choice is made. In addition, we notice that the individual's *freedom* comes under questions in the location of the quantitative account of strategic rationality. Could he choose whatever he wants to satisfy the rationality? Does he sufficiently enjoy freedom in the situation? Elster, one of the renowned interpreters of the individual's

⁶⁵ I consider it useful to give a brief account of the intransitive relationship among the options. The main purpose of it is to get a full account of the quantitative version of the strategic choice.

rationality in a choice situation, examines the individual's freedom in reference to the quantitative version of the strategic situation. He accordingly notice that individual's choice indeed enter as part-determinant of the constraints that shape the choice.⁶⁶ I shall equally find that the quantitative assessment can be regarded as a precise indication of such event which virtually undermines freedom in the given situation. As we have already seen in beginning of this chapter, freedom has been regarded a basic factor in order to pursue the rationality for an individual.⁶⁷ Accordingly, the assumption further suggests that a rational individual enjoys freedom in a choice situation whereby he chooses freely one from the available options, in order to obtain the expected goal. In other words, the rational individual can choose freely whatever he finds relevant for achieving the aim designed for. However, freedom has not been considered (in similar manner) in the location of the strategic rationality in which the choice of one party must be adjusted with the other, and so for freedom as well. A certain degree of restriction is imposed on the nature of individual's freedom in shaping the strategic rationality. Moreover, the rational individual further estimates that the achievement of the strategic goal greatly depend on the cooperative movement of the other party. This perception makes even an additional burden on the free movement of the individual towards persuasion of the goal. Thus, he is not able to move sufficiently free according to the manner of cooperation in the strategic situation. Then the strategic rationality itself emerges as somehow imposing a certain kind of unpleasant limitation on the free activity of the rational individual. The limitation is further exposed in more specific sense, when the choice or the preference is regulated by the numerical norm. Suppose he is offered to prefer 10,000 cusec waters as a product of the strategy. This perception clearly indicates that the freedom of choice is eventually confined by the given figure. Why will he not be freely permitted to prefer a normal flow of the river, or something which is not to be qualified in number? We actually fail to find such freedom in the quantitative version of the strategic choice. Thus we find that the rational individual prefers to maximize the quantitative assessment, which leads nowhere, but is something subject to impose constraint on the rationality. In other words, we insist that the lack of sufficient freedom can be regarded as a remarkable drawback in the strategic framework of Bangladesh, and it puts forward a considerable uncertainty in order to reach at the expected equilibrium point, or the utility.

- Risk-Cost-Benefit Analysis (R. C. B. A) and the strategic choice:

Up to now I have tried to detect some specific defects following from the quantitative aspect of the strategic choice. This is a sensible ground for suspecting whether the strategy can really

⁶⁶ For further information about the given issue, see Elster (ed.), 1986, p. 7.

⁶⁷ See, p. 23, in this chapter.

achieve the expected goal. Before making a final remark, it is significantly important for us to pay attention to one other relevant issue before implementing the strategy in reality. This is primarily concerned with how the actor calculates the effectiveness of the choice. Will the choice be regarded as leading to gain or a loss in the performance? Does it adequately insure the safety requirement of the natural environment? In which way can the gain and loss of the choice be estimated or be balanced? These are some fundamental issues involved in finding the effectiveness of the choice. A decision procedure emerges in the judgement of it. Thus, the rational individual allows the decision model in the process of performing the given choice.

The answer to the above questions, however, has been systematically addressed in the discussion of the risk-cost-benefit analysis (R.C.B.A). Therefore this permits me to accommodate R.C.B.A as a normative standard for measuring the gains and losses attached with the strategic choice of Bangladesh. In other words, the main target of the decision maker is to analyze carefully the risk associated with the strategy. The risk must not outweigh its contribution to the expected benefit, or the utility. If the R.C.B.A analysis designates that the risk is considerable, then performing the strategic choice will be characterized as a highly costly event. In other words, a risky decision eventually corresponds to disutility, or the non-benefit product of the given choice. Thus the gain and loss of the strategy are to be addressed in accordance with the standard of the R. C. B. A. The decision maker accordingly gives value on this standard and thus allows it in the process of his decision model. In the analysis, the main task will be to characterize exactly the risk, so that he can further define it in the sense of acceptability. For this purpose, the decision maker or the risk analyst primarily emphasizes the assessment of historical records, or the tolerance of past risks, in order to identify probabilities of present and future risk. I shall eventually find that the decision maker cannot determine exactly the probabilities on the basis of the said source, and so he is faced with problem in order to determine the acceptable level of risk for the mentioned period. I shall, however, at first highlight on the issue of why he emphasizes the historical records in the process of understanding the probabilities of risk.

As it has been indicated in the above discussion, we allow R.C.B.A in the purpose of estimating the risk and benefit attached with the choice of Bangladesh. The main objective is to consider whether the decision maker can obtain the relevant information related to characterize the level of risk. On this account, he estimates risk not in the usual sense, but in the sense of potential dangers. The magnitude of this cannot be analyzed adequately in any short period of time. Accordingly, the event requires a broader perspective, and so the calculation of the probabilities of risk must allow, not only the present period, but the future world, too. As a part of obtaining this information, he notes that the probabilities may be

recognized, but it is not possible to identify them in the relevant frequency model. It is therefore not possible to measure the probabilities in any exact figure of quantitative assessment. Suppose a case of flood happens as result of the fluctuation of the river's flow. Even though the probabilities of the flood occurring in a given year with a given impact of life and property can somehow be known, the precise realization of the probabilities of risk (e.g., when, where, to whom, and how severe the actual damages) would still be random or completely unknown. The quantitative assessment of those events can merely mislead in understanding the fundamental problem that drives those hazards. The decision maker thus finds that the probability assessment on those events requires other processes, rather than quantitative analysis, or he assumes that qualitative analysis may be a relevant feature.⁶⁸ On this account, it appears that he considers focusing on the historical records or the past risks, which he considers significantly relevant for identifying the probabilities of risk.

- Past risk and evaluation of the probabilities of risk:

As a part of obtaining this information, the decision maker carefully review the past records of the river's water connected with various events such as floods, drought, quality of water and others. He considers accordingly that the average or annual probabilities of fatality appearing from these events can be regarded as a standpoint in order to identify the probabilities for present and future risk. In this process, he finally develop a form of order, whereby it is possible to determine the probabilities of higher and lower or acceptable risk associated with the events of the river's water.⁶⁹ He thus insists that he can characterize the probabilities by following the given estimation. Nevertheless, he is confronted with some tough issues in this respect. How can the probability assessment be related to the events of the river's water? To what extent can it be made sure that the past records accurately correspond to the probabilities assessment of risk? I suppose it is useful here to focus again on the case of the river's flood. The event will give me opportunity to look at how the decision maker explains these issues. Accordingly, he can estimate the probability of such an event happening on the basis of recent or historical stream flow records. But those records may be of limited duration or completeness, and thus it may not accurately represent the longer historical record, or the overall information. In addition, the underlying statistical model for floods described in the past records can be suspected, especially if the statistical properties of the water flow in the river are non-stationary, for example, because of continuing land-use changes in river basin, or long term climate change.⁷⁰ Accordingly, the consideration of the past records

⁶⁸ We are thus being acquainted with two types of risk analysis; quantitative and qualitative. For further information regarding these, see Stern and Fineberg, 1996, p. 97-98.

⁶⁹ See, Shrader-Frechette, "Risk Analysis and Scientific Method", 1985b, p. 34-36.

whereby the risk analyst defines the annual probability of fatality is not enough to provide correct information and equally estimating the average fatality. In addition, he further perceives that the characterization or the acceptability of the probabilities of risk appears as a factor of numerous circumstances which were not adequately informed in the past records. One of them is that the non-stationary fact of the river's flow has direct implication on the quality of the natural environment, as well. However, the information about this was not adequately known in the past record. Due to the lack of such knowledge, he finds that he even cannot estimate precisely regarding the probabilities of the environmental risk - a valuable fact which should be accommodated in the decision model. In other words, we notice that he meets significant difficulty in characterizing the probabilities in response to the various circumstances on the basis of the past records.

- The probability assessment in view of the subjective assessment:

Although the decision maker faces uncertainty in regard to characterize precisely the probabilities of risk according to the objective assessment of past records, this does not necessarily imply that he is prevented from calculating it in another direction.⁷¹ Accordingly, he considers calculating past records in the consideration of subjective assessment. In a way, he can overcome the uncertainty he is facing in order to determine the probabilities of risk. This will further pave the way to implement the choice. Hence, he takes the analysis of the risk - benefit relationship into the personal assessment. He accordingly prepares to estimate the events of the past records in order to define the probabilities for the given period. He notes in this regard that his strategic choice contains a larger scale of benefit in proportion to the probabilities of the risk, or the acceptable risk. This assumption can be specified in the following sense. The acceptable risk, for instance, is proportional to 1,5 the power of the possible benefit. In other words, he regards this figure as a cut-off point between the acceptable and the not acceptable level of risk. In this way, he claims that he has managed to identify accurately the acceptable risk, in reference to the personal account of the past records. Moreover, he implicitly insists that he is willing to adapt himself to such level of risk, because he acknowledges that it as a voluntary risk. Voluntary risk is always more acceptable than risk that is involuntarily imposed. He therefore considers that the given characterization in a way actually reduces the risk of the expected benefit.⁷² In other words, he finds that the strategy sufficiently insures the achievement of the possible benefit, or reaching the equilibrium point.

⁷⁰ I have considered certain facts on the event of the flood from Stern and Fineberg (eds.), 1996, p. 106 - 108.

⁷¹ I have already mentioned, but once again points out in the current context that the subjective account of risk-cost-benefit analysis is not considered as normative assessment of the individual rationality.

⁷² See, Shrader-Frechette, 1985b, p. 36.

The assumption therefore strengthens his decision model and so Bangladesh finally decides to implement the strategy.

Suspicion has been raised along two dimensions in respect of accepting the voluntary risk in view of the personal account. Voluntary risk implies that the decision maker understands and accepts the probability of risk. But nevertheless, this does not necessarily mean he voluntarily accept it. If he feels that he cannot say “no”, by following the nature of the strategic rationality, is his decision truly voluntary? How much should a volunteer be allowed to sacrifice risk in response to save the possible benefit, or the strategy? These are genuine questions one can easily ask, in reference to the view of accepting the voluntary risk. The other issue is that the decision maker allows the rate of 1.5 risk as acceptable or adjustable, without estimating accurately its corresponding effect on the life and property associated with the events of the river’s water. Thus question has been raised about accepting the subjective assessment of risk in most cases, because it is somehow based on a vague estimation in regard to where the cut-off should be.⁷³ What the decision maker decides is that if the risk assessment is somehow appropriate to serve his purpose then let it do. In other words, disagreement has risen over the acceptable risk and the proposed benefit, because they are inequitably distributed in the personal assessment of the risk-benefit relationship. Therefore the subjective assessment of such relationship cannot be accepted according to the normative criteria of the R.C.B.A. I therefore consider that the permission to implement this strategy represents a risky decision in relation to achieving the goal.

D. Particularistic consequentialism and a possible solution to the conflict:

In the preceding section, I have separately examined the respective interests of India and Bangladesh associated with the Ganges water according to the Hobbesian account of the particularistic consequentialism, or the maximizing version of the individual’s rationality. As I have pointed out here, the achievement of the individual’s rationality does not exactly correspond to the normative criteria of the rational behaviour. However, we have seen that the maximizing version of each party’s rationality is promoting a conflict of interests between the two countries. My main objective in this part of the discussion will be to take a closer look at the possibility for a stable solution to the conflict, within the given context of the individual’s rationality. In this account, I shall mainly focus on these issues: What will be regarded here as a cause for promoting the conflict? How could a stable solution to the conflict be found within the given consideration of rationality? Hobbes considers these issues in the purpose of

⁷³ I have already explained, in the previous discussion, regarding the obstacles in acknowledging the quantitative figure of a cut-off point as a result of the personal account in the risk assessment. I, therefore, find it is not useful to repeat the discussion again. For the previous discussion, see p. 37.

providing a further account in response to find a stable solution to the conflict. This assumption then permits me to allow his view into the account. He exclusively discusses this in the framework of the contract theory accommodated in the same book, “Leviathan”. He classifies the conflict of interests in two aspects. One is the extreme version, and he identifies this as the main cause for promoting the conflict. He finds this in the *natural condition* of the individual’s rationality. The other is the moderate version in which he finds that each individual involved in the conflict estimates the rationality in a well-understood or in a constrained manner. Accordingly, this assumption allows for solving the conflict by stepping into the acknowledgement of an agreement. He explains this in view of the *civil - condition* of the individual’s rationality.⁷⁴ He considers a third party in this respect, or a powerful independent institution, whose main objective is to determine the contract for a stable situation. I shall, in this respect, find that the Hobbesian views cannot determine a genuine or a stable solution to the conflict, as it is portrayed by the given context of rationality. In order to back up my own view, it is essential for me to look at how Hobbes explains the nature of individual rationality in the two notions.

- The individual rationality and the natural condition:

In an attempt to explain the individual’s rationality in the criterion of the natural condition, Hobbes primarily focus on the condition of individual’s *self preservation*, which he insists play a chief role in the situation. On this score, he further points out that the individual rationality estimates self-preservation, not merely in the sense of survival, but primarily calculates it in consideration of the well-being aspect of life.⁷⁵ Self preservation is thus integrated as a key standard in formulating the nature of the individual’s rationality. This is why each individual estimates rationality in the extreme sense and so attempts to promote it as far as possible. In this state of rationality, he does not acknowledge any barriers on the unlimited freedom he enjoys, and so he neither considers agreement nor even respects norms. According to the Hobbesian characterization, each individual presumes they have a natural right or *Jus naturale* to estimate rationality in such direction. As Hobbes remarks:

The Right of Nature, . . . is the Liberty each man hath, to use his own power, as he will himselfe, for the pre-servation of his own Nature; that is to say, of his own Life; and consequently, of doing anything, which is his own Judgement, and Reason, hee shall conceive to be the aptest means thereunto.⁷⁶

⁷⁴ Thommessen & Wetlesen, 1996, p. 165

⁷⁵ See, Gauthier, 1986, p. 158-159

⁷⁶ Tuck (ed.), 1991, chap. 14, p. 91

The above view indicates that each individual exercises this unlimited natural right or liberty as per their own power, in order to attain whatever is necessary to serve their self-preservation version of rationality. Right is estimated here as nothing but acting only for enhancing the given feature of self-preservation in the strongest sense. Therefore, it has nothing to do with the moral or judicial sense of *right*. This uncontrolled usage of their own natural right indeed leads to a conflict of interests or rationality between the individuals. In this way, hostility takes place between them in the purpose of increasing their self-preservation. This is how Hobbes explains the individual's rationality in the natural condition, where he finds that the outcome of the extreme version of rationality is the cause behind the conflict between the individuals.

- The civil condition of the individual's rationality and solving the conflict of interests:

Hobbes primarily regards the notion of the civil condition in the sense that the extreme maximizer subsequently agrees on solving the conflict in a peaceful way. The main purpose of considering this is that peace is regarded as significantly relevant for maintaining the prospect of their self-preservation. He points out in this regard:

. . . a man is forbidden to do, that, which is destructive of his life, or taketh away the means of preserving the same; and to omit, that, by which he thinketh it may be best preserved.⁷⁷

As we notice from the above lines, the perception of self-preservation equally plays a vital role in estimating the individual's rationality in the civil condition. What will happen if the parties agree to solve the conflict on the basis of a set of mutual commitments? Hobbes estimates the mutual commitments in the sense that no one will harm, but rather help each other for the sake of their common good, or for the well-being of all parties. He gathers common norms or general rules in the framework of natural law or *Lex naturalis*.⁷⁸ The law is designed to bring the parties into an agreement regulated by the principle of mutual benefit. It is primarily highlighted by the perception that each party respectively must admit to draw certain constraint on their maximizing version of rationality or their unlimited natural right. By considering the given event, each party tends to promote the self preservation in a well-understanding manner, provided other or others would do the same. The renunciation of each party's interests in the considered sense can be characterised as a moderate version of individual's rationality. On the basis of such concession, the parties admit to reach at an agreement. Hence they finally manage to solve the conflict in a peaceful manner. This is how

⁷⁷ Ibid.

⁷⁸ Thommessen & Wetlesen, 1996, p. 165

Hobbes outlines his own notion of agreement or contract theory by stressing that the conflict of interests between individuals can be solved according to the norms of the civil condition.

- Is it a stable agreement?

As we have seen in the previous section, the parties emerge out of the conflict by acknowledging to the agreement. Nevertheless, the most crucial issue regarding the Hobbesian contract theory is: How would the parties comply with this? This is a practical problem which Hobbes himself recognises in a further assessment of the agreement. He accordingly remarks: It is one thing to make an agreement or covenant, but quite another to keep it.⁷⁹ In other words, the parties have managed to make the agreement, but this does not confirm that they must be abided by it. Thus a considerable problem remains in the justification of why rational individuals should comply with the agreement. For instance, each party involved in the agreement considers that it is rational for them to acknowledge it if others do the same. They prefer to accept the agreement because each party receives benefit from the mutual renunciation of their self-interests, and thus they remain in a non-violent situation. But nonetheless, how will each party keep or follow the agreement, even though they estimate it according to the moderate version of the rationality? In response to this issue, each party emphasize that the final criterion for keeping the agreement largely depend on whether it provides benefit for maintaining self-preservation or not. In other words, each party examines it in view of the risk-cost-benefit analysis, which can be exposed in the following two senses:⁸⁰

1. According to the rationality of each party it is found that if keeping the agreement emerges as a costly event in respect of determining self-preservation, he then considers that holding the agreement is a risk because of paying the cost. Accordingly, he prefers to violate the agreement, as he will be benefited by doing so.

2. If a moderate maximizer is somehow confirmed in the assessment of the situation, which tells him that the other party (or parties) adheres to the agreement, but finds that if he breaches the agreement it will ultimately provide him with the opportunity for a greater benefit in response to self-preservation, then he will do so. Or, if he finds that he has no risk or obligation to compensate to anybody for violating the agreement, he will rather be benefited by doing so. It is therefore more advantageous for him to breach the covenant on the basis of the given ground.

⁷⁹ Gauthier, 1986, p. 160

⁸⁰ I formulate the views after considering the following authors: Gauthier, 1986, p. 166 – 168. And, Thommessen & Wetlessen, 1996, p. 166-167.

The central essence appearing from the two views is that if a moderate maximizer notices that to hold the contract turns into a risky or costly issue in the calculation of self-preservation in any form then it is beneficial for him to violate it. In another sense, self-preservation becomes the measurement by which the moderate maximizer determines whether to keep the agreement or not. Hobbes, however, examines carefully this event and he does not propose any argument in favour of holding the agreement. In stead, he surprisingly states that it is a matter which is subject to the individual's rationality whether one will keep the agreement or not.⁸¹ In other words, the view simply suggests that a rational individual can violate the covenant if it is relevant for maintaining self-preservation.

The problem of keeping the agreement in a stable situation eventually turns into a big challenge for Hobbes, too. In finding a solution to it, he allows a framework of the natural law based on the common norms, which will finally ensure that each party or individual will obey to the agreement made. He accordingly introduces the notion of a sovereign power, or a *deus ex machina* who can enforce the natural law between the parties.⁸² The sovereign ensures that each party will comply with the covenant made. Hobbes presumes that individuals will obey the sovereign, since it possesses superior power or more authoritative power than any of the individuals who live within the framework of the civil condition. In addition, the individuals acknowledge the essentiality of such a power because its function is somehow sufficient to maintain the civil condition effectively. Accordingly, the sovereign have capacity to take care of the self-preservation or the self-interests of each individual in the course of the situation. Thus Hobbes insists that the sovereign has valid power to enforce the natural law, which virtually binds the actors in common norms, and so the rational individuals will ultimately not breach the agreement once it is made.⁸³ The sovereign is identified here as a political institution or anything else, who/which at least holds substantial power and is able to enforce the agreement.

However, the Hobbesian pleads for the sovereign power raises immediately a powerful question: Could we agree to apply such power in order to solve the problem? His political power is based on natural law, and this kind of law is vulnerable, as it has no legal or moral force. Hobbes, by virtue of the political power, proposes a political, and not a moral or legal solution to the conflict. In contrast, the significant advantage lying in a moral solution to the problem is that it includes all parties into a moral obligation, whereby each individual must follow the agreement. Thus it provides a stable foundation for solving the conflict. This is

⁸¹ Gauthier, 1986, p. 161

⁸² Ibid. p.10

⁸³ Gauthier, 1986, p. 162-163, and Thommessen & Wetlesen, 1996, p. 166-167

what we miss with respect to the Hobbesian concept of agreement. Lacking of such quality, we cannot make sure that the parties, following the maximizing version of rationality, will always adhere to the agreement made for them. This is why I am really reluctant to admit that the agreement based on the Hobbesian natural law can provide a stable solution to the conflict between the two parties.

Conclusion:

In this chapter, I have at first investigated the interests or rationality of India and Bangladesh with regard to the Ganges water from their respective point of view, and I have examined this issue according to the Hobbesian version of particularistic consequentialism. My main objective has been to justify their rationality from the viewpoint of normative assessment. According to the normative justification, each party must rightly meet essential conditions of rationality in every step of conducting their own behaviour in order to pursue the goal or rationality. Accordingly, my judgement is as follows: 1. I have found that the Indian choice of preferring the Farakka dam does not meet exactly the condition of consistency with regard to the other option, nor even does he manage quantitatively to identify the environmental risk following from the functioning of the dam. His own quantitative assessment does not address to the correct characterization of risk, but is only for the purpose of implementing the decision of running the dam, which is not consistent with the normative standpoint of the R.C.B.A. Thus we have found that India has actually ignored the criteria of rationality in order to achieve his own goal, and therefore I insist that his attainment of such rationality cannot be accepted from the normative qualification. 2. In response to the Indian choice, Bangladesh considers an equilibrium choice which appears as a quantitative version of strategic choice. We have found that this choice neglects the condition of choosing freely for a better preference, as well as not being able to insure accurately the achievement of the preferable quantity of water in every situation (from one situation to another). Moreover, we have found that he cannot, on the basis of past risk, characterize the acceptable risk for the present and future period in order to define a safe decision for implementing the choice. His own assessment of the past risk does not represent a correct estimation in order to characterize risk following from events of the river's water, but only serves his purpose for implementing the decision, which cannot be regarded as a basis for satisfying the rational or normative criterion of R.C.B.A. Thus, we have found that Bangladesh has failed to satisfy the normative criteria of rationality, and therefore we are doubtful whether he can really reach his goal or the equilibrium point as result of his initial strategic choice. 3. I have lastly examined whether it is really possible to find a stable solution to the conflict of interests between the parties according to the Hobbesian version of contract theory, as it appears in the discussion of particularistic consequentialism. I have found that it is not possible to find a solution, as it is

viewed in the maximization version of individual's rationality which does not guarantee this. I therefore find that the Hobbesian contract theory is actually not a promising view in this respect.

Chapter 3: Who are all parties concerned?

“A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise”.⁸⁴
(p.224-25)

- Aldo Leopold

“... the best good appears to be something complete. So, if there is only one that is complete, that would be what we are searching for ; . . . ”.⁸⁵
- Aristotle

Introduction:

As we have seen in the case study, the dam does not only effect on the human state of affairs, but also brings adversarial and dramatic alteration in features of non-human natural entities, species and/or collectively the entire natural environment in the region. These features may essentially reflect serious problems in the given elements. This chapter will then, from a moral point of view, study closely not only this problem, but will also attempt to find a solution to it. Eventually the perception will give a complete moral view of the environmental situation. From a moral philosophical point of view, the following fundamental questions arise from the event: What, if any, should be the normative philosophical objection against the dam? How can this be justified? What would be a morally defined alternative policy or solution to the problem? And, which way can this be addressed to justify such environmental situation or to justify a general preservation policy for the environment? In finding answers to these questions I shall focus on the discussion of environmental ethics in moral philosophy which involves relevant facts, values and norms as criteria for systematic judgement of an environmental situation. In this regard I shall consider the non-anthropocentric version of environmental ethics. The objective is not to defend non-anthropocentrism. I shall, however, find that the non-anthropocentric version of environmental ethics supplies necessary and sufficient prospects for finding answers to the said issues. In the following, my main objective

⁸⁴ From his book, “A Sand County Almanac”, published 1968. Each of his statements quoted from this book, will be identified by page number in parentheses. I shall follow this style in the following discussion of the chapter when the matter is considered.

⁸⁵ Annas, 1993, p. 39 – 40.

will be to examine the findings in consideration with the non-anthropocentric account of utilitarian moral theory. The basic moral norm of this theory is traditionally defined as promoting the general happiness or interests of all parties involved in a situation. In the Bentham account of classical utilitarianism, the sentient characteristic is regarded as the basic moral unit of measuring the interests of human and nonhumans who possesses the characteristic. I shall, however, use the sentient approach of classical utilitarianism for estimating the interests of non-human sentient animals. Singer defines an extensive account of this view where he establishes the interest of non-human sentient individual animals in equal moral status value as well as protecting it, in relation to fellow humans. I shall consider this assumption in examining the interests of the non-human sentient animals in the given situation. I shall find that the decision of making the dam ignores the moral status by pointing out significant reduction in the normal functioning of a certain individual animal as a representative of the non-human sentient animals in the region. Given its credibility, the conceptual framework of the approach nevertheless limits itself only to the non-human sentient animals, and does not consider other natural entities in the environmental situation. I shall characterize this criterion as the individualistic account of non-anthropocentric utilitarianism.

Having accepted the credibility of the individualistic approach despite its limitations, I shall further cast light on Callicott's interpretation of Leopold's holistic account of ecological facts as well as its ethical aspects, illustrated in *The Land Ethic*. I consider this discussion to be significantly relevant for estimating the environmental crisis or the ecological impact of the dam in a complete sense. At first I shall address Callicott's scientific account of ecology. I shall show how the dam produces an unhealthy functional state of the whole ecosystem in the region. In considering this assumption for ethical accounts, Callicott primarily concentrates on the value aspect of the ecological facts connected to *The Land Ethic*, or environmental ethic. He traces the value aspect in Hume's feeling based ethical value criteria, or moral psychology. Callicott further explains Darwin's evolutionary-ecological discussion of the whole natural environment or ecosystem in a moral account. Darwin attributes moral status to the feeling based values by finding that this value is the main leading force in the survival states, or the functioning of the whole ecosystem. I consider here that the moral status of Leopold's environmental ethic is fundamentally based on Hume's feeling based value perceptions. Accordingly, I shall find that the said moral status value is simply disregarded in the decision making of the dam. Callicott's non-anthropocentric and non-individualistic moral account of the land ethic is only confined to finding the value status, and he takes no further attempt to set this value in norm of a particular moral theory. I shall find in this regard, that Aristotle's teleological ethic of the holistic kind offers an opportunity to look upon this issue. Norton has a reflection of this moral theory in account for a general preservation policy. He

draws this holistic ethic in view with human values or well-being, whereof he considers that its moral norm has a promising aspect in protecting and promoting the functioning value rather than the feeling based moral value of the holistic ecosystem. I shall find that this policy is consistent with weak anthropocentrism in which an action or a dam is morally permissible in so far as it does not have negative affect of the functioning value of the ecosystem. I shall accordingly find that this functioning value account of the weak anthropocentric policy in this holistic ethic cannot firmly protect all parties' interests, or the total value of the whole ecosystem. I consider that this is not a proper protection policy for such environmental situation. I shall then consider the feeling based value account of Aristotle's holistic ethic. I shall find that the moral norm of this holistic ethic firmly protects and promotes the total value of the holistic ecosystem, where all parties' interests are equally involved. I shall characterize this assumption as the non-anthropocentric version of a wider or total utilitarianism in environmental ethics. I consider that this ethic is properly consistent with such environmental situation, or with a general preservation policy for the natural environment. This policy will then be characterized as an alternative model or solution to the environmental situation in the region.

These are the main elements which I shall illustrate throughout the discussion of the chapter. I shall arrange them in the following sense. 1. As a part of this chapter I shall discuss some basic elements of environmental ethics. 2. I shall focus on Singer's sentient account of utilitarianism. 3. I shall concentrate on Callicott's interpretation of Leopold's informal ecological and ethical discussion, which follows from the Leopold's discussion of *The Land Ethic*. 4. I shall illustrate Norton's views of Callicott's non-anthropocentric value account of ecological ethic in consideration with the moral norm of Aristotle's holistic ethic. 5. Finally, I shall consider Aristotle's holistic ethic as a wider sense of utilitarianism which moral norm is to be viewed as a general preservation policy for the value of the whole ecosystem.

A. What is environmental ethics?

As it is clearly pointed out in this perception, the dam contributes to serious problems or crisis, in everything from non-human natural entities to the entire natural environment in the region. The justification of such technologically oriented human action raises serious questions in the discussion of normative philosophy. Hence, this sort of environmental problem (or problems) turns into an ethical discussion, which emerges as a subject called environmental ethics. Thus environmental ethics occupy a specific place in normative philosophy. Environmental ethics focus on finding the values of the said natural objects in order to better understand the norms that offer protection for them. In this reading, the subject concentrates on the values of the objects not only in characterizing the quality of such action,

but also allows proper norms in a sense of determining the given task. Hence, I find that the environmental effects of the Farakka dam are greatly consistent with the discussion of environmental ethics. Therefore, I shall at first draw attention to the notion of values according to features of the environmental ethics pertaining to the said environmental situation.

One of the first and most serious challenges in any ethical study involves identifying which object is to be regarded as a morally accountable value and which object is to be excluded in such judgement. This is a challenging issue for environmental ethics too. Moral philosophers or environmental ethicists allow the two following considerations in evaluating the concept of value. One is *intrinsic* or *inherent* value and the other is *instrumental* value. An object has intrinsic value when it holds essential characteristic or it is qualified independently for its own worth.⁸⁶ This assumption satisfies the basic requirement in order to identify the object as a moral subject and so being morally considerable. Moral subjects are therefore characterized in terms of intrinsic value, and moral considerability is dependent on being identified by intrinsic value. Once an object possesses this criterion moral status value or moral status is attributed to it. In the view of environmental ethics, the assumption further implicates that when moral status value is ascribed to an object it is considered a moral subject, which in a way implies that the object is to be protected by moral norm. On the other hand, the notion of instrumental value is characterized in the sense of usefulness. This indicates that an object has no independent value, but depends on what it can be used for, or what it serves in fulfilling other's purposes in a situation. The object then has no moral considerability or status. Thus, these two perceptions of value differ fundamentally from each other⁸⁷. The distinction has significant implication in recent decades resulting in the emergence of three approaches within the framework of environmental ethics: 1. *Strong anthropocentrism* or *traditional human centred ethics*. 2. *Weak anthropocentrism* or *pseudo anthropocentrism*. 3. *Non-anthropocentrism*. In the following discussion I shall briefly illustrate each of them respectively, whereby I shall set forth my own account.

- Strong anthropocentrism:

Given the value premises in the constitution of environmental ethics, anthropocentrism in its strongest term insists that one has to be a human being in order to have moral status value. In this consideration, it is necessary to be a member of the human species (*Homo sapiens*) in

⁸⁶ Callicott, 1989, chap. 9, p.160. I shall use either the term intrinsic or inherent value, according to their relevance in the context of the chapter.

⁸⁷ In some cases it might appear that the considerations of both instrumental and intrinsic value are dependent on humans who value. See, Des Jardins, 1993, p. 145-146.

order to be attributable to the said value. This implies that human beings are the only morally accountable member of the universe. Non-human entities, therefore, are not directly accounted for in this assumption. The approach further insists that non-human entities only have value in so far as they satisfy human values or wellbeing. In this anthropocentric framework humans has right to use non-human entities instrumentally as resources of one or another kind in order to satisfy the given goal as far as possible. In this assessment, moral norms are based on preserving the entities solely in terms of obtaining this instrumental goal. Therefore, governed by such norm, the right action is using the resources properly in reference to this objective. This, accordingly, recommends to humans not to abuse, overuse or destroy the said objects so that other or future humans can use them. This is why the approach is known as strong anthropocentrism, because it measures the nonhuman natural entities exclusively in terms of satisfying human wellbeing, in the given sense.

- Weak anthropocentrism:

Not all anthropocentrists agree with the viewpoint of strong anthropocentrism in that the natural world is to be measured only in the satisfaction of human values. Some of them criticize the assumption in the sense that this attitude eventually will leave the natural environment to the ravages of meeting the never ending satisfaction of human values. After referring to the problem which lies in strong anthropocentrism, they insist that it is essential to draw a limitation to the said calculation of human values. Hence, some environmental ethicists within the range of anthropocentrism appear with a softer or less radical approach known as weak anthropocentrism. This position lays out its argument by saying that human beings are intrinsically more valuable in part than non humans, because they can disclose and measure the worth of nonhumans.⁸⁸ The assumption then qualifies humans to reform the notion of human values in consideration with nonhuman entities. Accordingly, weak anthropocentrists figure out that non humans have worth of their own, something that is relative to a basic or intrinsic value judgement.⁸⁹ By virtue of this perception, they emphasize that nonhumans are not to be treated merely in an instrumental sense. They insist that this matter must be countenanced in the calculation of human values. Thus, weak anthropocentrism allows the said estimation of nonhumans in consideration of human values in a much broader sense than in strong anthropocentrism. Weak anthropocentrists consider that nonhuman entities are valuable for their contribution to compute human values in a more reasonable and broader sense than strong anthropocentrism. This indicates that the estimation of human values must correspond to the sense that it limits the damaging affect on the value

⁸⁸ Zimmerman, (Gen.ed.), 1993, p.vii-viii.

⁸⁹ Norton, 1987, p. 10-14.

of non-human entities. On the basis of such value account, a weak anthropocentrism constitutes a moral norm whereby human can protect or limit the exploitation of nonhuman entities as well as satisfy their own values. Having considered the purpose of the norm in this way, a weak anthropocentrism then, finds no reason for attributing intrinsic value to nonhuman entities. This is why weak anthropocentrism is regarded as a form of anthropocentrism, as it does not ascribe moral status value to the said object.

- Non-anthropocentrism:

Given the weak anthropocentrism's consideration for the wider assessment of human values, scepticism nevertheless arises among a number of environmental ethicists whether the approach can sufficiently or conclusively prohibit injury to non-humans as long as it allows the said object into instrumental assessment. The concerned moral philosophers orchestrate their view by pointing out that the weak anthropocentrism is conceptually inadequate to ensure firm safeguard for the said object as strictly as any ethical argument require. They assume that progress can only be made in ending this scepticism, and so such sort of environment crisis, once we bring a complete change in our anthropocentric ethical attitudes toward the object. Hence, a room for non-anthropocentric assumption comes up forefront in the work of the said environmental ethicists. Contrary to the anthropocentric views, non-anthropocentrism places its key argument in the form that nonhuman natural entities and/or nature as a whole have own quality more than instrumental value. That is; they have their own moral status value. Non anthropocentrism reduces the issue to the question of whether intrinsic value encompasses other than humans and is including non humans as well. In other words, the approach eliminates the gap between human and nonhumans. Thus, the approach allows human and nonhumans in moral consideration. Non-anthropocentrists, therefore, argue that the consideration has a genuine moral force in protecting the moral status of the object. On the basis of such value premise, they consider an environmentally-sensitive moral norm which appeals to morally right action in relation to protect and promote the wellbeing of both human and nonhumans as a whole. The approach is accordingly known as non-anthropocentrism, as it considers value and norm in the same moral equation.

In the following discussion I shall find, in view with our concerned environmental situation, that non-anthropocentrism is a more convincing approach than the two other approaches of environmental ethics. Accordingly, the main task of this approach is to establish a new stage of moral philosophy which goes beyond the barrier of human species, and encompasses the values of non-human natural entities in equal moral consideration. In this way they will be equally protected in an environmental situation. This explicitly gives moral awareness and so concern for environmental problems following from such a human action as a moral problem

in the first place. Non-anthropocentrism is then directly and effectively addressing the problem as a fundamental ethical matter and so effectively insists that it must be solved morally. In finding the moral protection of such environmental situation, it recommends moral norms ensuring protection and so prosperity to individual as well all beings involved in the natural environment. The assumption, therefore, gives me plausible justification for considering the non-anthropocentric approach when dealing with the environmental situation following from the dam in this region. Non-anthropocentrists examine nonhuman problems according to their considered moral theory, stretching it to individual living organisms, non-living organisms, species as well as the whole nature or ecosystem. Accordingly, I shall in the following discussion focus on the environmental crisis resulting from the dam.

B. The dam and the moral status of nonhuman animals in individualistic non-anthropocentrism:

Following from the dam in this region, how can the affected parties of nonhuman living entities as well as the entire natural environment be addressed in the framework of normative philosophy? Some moral philosophers in their non-anthropocentric approach have found that it is easy to trace out the components of the nonhuman living entities in the natural environment which exists nearby or somehow is familiar to human beings. Hence, they have come up with the perception that the nonhuman animals which are severely affected by such a human action should be considered in the front line of moral scrutiny.⁹⁰ The assumption, then, permits me at first to shed light on the said being as one of the affected parties resulting from the situation. However, once they allow this, the following fundamental issues appear before them in respect of the moral inquiry: Do the nonhuman animals have moral status value to be accounted for in the moral framework? How can this be explained? And, what would be the philosophical justification of such perception? The Australian philosopher Peter Singer can be regarded as one of the prominent figures exclusively concerned with such matters in his moral philosophical discussion. His main argument appeals for extension of the moral horizon to include nonhuman living animals in equal moral consideration. In a way they will be entitled to proper treatment as well as protection against such human activities. He elaborately illustrates the view in his book called, “Animal Liberation”, first published in 1975.

- Singer’s critical assessment of the human centred ethics:

Singer mainly blames the mistreatment of non-human animals as an outcome of the traditional view of human centred ethics. He points out that in its practice no room is actually

⁹⁰ Singer, 1975, p. vii–x, and Des Jardins, 1993, p.123.

left to give direct moral weight on the nonhuman animals. The perception does not even make any significant objection against abusing or exploiting animals in an instrumental sense of attaining human's goal in a relevant situation. It does not matter what affect it makes on the state of the said animal, as long as the event does not turn into a factor of concern for humans. Singer uncovers that such prejudice actually lies behind or constitute the given type of human's decision or behaviour. He therefore characterizes the behaviour as a morally unjustifiable attitude to the animals following from the traditional view.⁹¹ This is why he blames the practice of the said ethics for needlessly creating miserable states for the animals in such a situation. This incentive strongly influences him to point out that the main objective of the book is to liberate animals from such unjustifiable assessment, and so to find a way to allow them into equal moral consideration to humans. He is thus persuaded to entitle the book "Animal Liberation".⁹² After considering its biasness only towards humans, Singer emphatically insists that we must disregard this version of anthropocentrism. Rather, we should expand our moral dimension, which is not to be restricted arbitrarily to humans, and show an unbiased assessment or a basic route in order to allow non-human animals in equal consideration.⁹³ Hence, Singer assumes that the non-anthropocentric approach provides such a road-map in expanding the moral world involving equal estimation of the said element. We thus consider that his expansive moral view will be significantly consistent with regard to measure the condition for the given object in relation to the situation. Accordingly, I shall first follow his argument regarding the moral expansion of finding non-human animals in equal consideration. Thereafter, I shall examine the way he defends this against certain criticism following from the argument as a part of the justification.

- Singer's extensive account of classical utilitarianism and equal consideration of the non-human individual animals' interests:

As Singer allows the non-anthropocentric approach as a sensible notion for calculating mistreatment of the nonhuman animals in such a situation, then the most crucial question to ask him is: Who is to speak for them in ascribing moral status value in equal consideration to humans? In response to this issue, he cites a worthy sentence from the viewpoint of Bentham: "The question is not, Can they reason? nor Can they talk? but, Can they suffer?"⁹⁴ By using this sentence,

⁹¹ Singer, 1975, p. x – xii, and Singer, 1994, p. 265. The term animals I understand in the sense of non-human animals. This notion will be followed throughout this section of the chapter, although I shall use the term animal in some places in accordance with flavour of the sentence.

⁹² See, Singer, 1975, p., xii-xiii.

⁹³ Singer, 1975, p. x., and Føllesdal (ed.), 2000, p. 66.

⁹⁴ Singer, 1975, p.8.

Singer argues that the capacity to suffer or feel pain is an essential characteristic for the consideration of interests into the moral world. This accordingly implies *sentience*, or the capability of consciousness, to be regarded as a vital criterion in order to ascribe moral status value, and so for estimating the interests of its possessor in an equal moral consideration. Accordingly, Singer finds an essential analogy from human's interests in feeling pleasure and avoiding pain, to similar interests in other sentient beings of non-human living animals. He then emphasizes the view that this analogical characteristic is straightforwardly relevant for measuring the interests of the nonhuman individual animals in equal moral consideration. Singer thus takes the sentient characteristic as a reference point in extending the moral world, which allows him to measure equally both the interests of humans and non-human animals within the given circle of morality.⁹⁵ Hence, he assumes that the sentient version of classical utilitarianism is essentially able to expand the moral world and measures equally the interests of human and non-human animals in a non-anthropocentric sense.

Singer considers the term “sentience” in order to refer to the capacity of feeling pain or pleasure. Accordingly, sentience appears as an essential criterion which is intrinsically valuable for estimating the essential state of the said being. A sentient animal then, has the strong claim that it has at least a minimal interest; i.e., the relevant interests of a life without suffering. This is a central condition which must be satisfied in a meaningful explanation of the interests of animals. Without the quality of sentience - a rock, for example, cannot be said to have interests at all, because it has not such capacity. But, if a sentient animal suffers, there can be no moral justification for refusing to take the event into account. Armed with this consideration, Singer explicitly demonstrates that the capacity to feel pain or pleasure is all which is needed for an individual animal in determining equal consideration of interests. Therefore, this characteristic has itself the essential and sufficient normative force to attribute moral status value on the said being. The status similarly leads to consideration for the moral protection of the said animal's interests. The characteristic then allows for moral status value as well as the equal protection of the said being, in a relevant situation. This is how the interests of an individual animal are to be adequately regarded as the right one. In other words, Singer actually regards the right of animals in consideration with the interests identified by the sentient characteristic.⁹⁶ Accordingly, he insists that the moral status of any particular act or decision must be dependent on the satisfaction of the said requirement of the

⁹⁵ By virtue of “the principle of equality”, Singer is not claiming that all sentient animals have the same interests, or non-human animals deserve identical treatment as humans, but the principle actually appeals for equal consideration of the fundamental interests to all conscious beings. See, Singer, 1975, p. 2-6.

⁹⁶ A parallel argument is followed by Tom Regan, in his discussion of animal ethic. He straightforwardly considers right based ethics whereby he asserts that *subject - of - a - life* is to be regarded a vital criterion in attributing the moral status value, and so protects the right of non-human individual animals, in a relevant situation. He discusses comprehensively the event in his book called “The Case For Animal Rights” published in 1983. I consider the notion from the following source: Des Jardins, 1993, p. 128 – 135.

animal's interests. Thus he sets up the corner stone in constituting the animal ethic. Discounting this requirement in any rate, the action will be regarded as morally unjustifiable. Therefore, the central piece of Singer's animal ethic, or the said version of classical utilitarianism, argues that an action is morally right if it minimizes the pain (or the bad) and maximizes the pleasure (or the good) of the non-human sentient animals involved in a situation.

- The assessment of animal interests:

As we have seen in the preceding discussion, Singer's extensive account of the sentient characteristic upgrades the said animals as an actual party involved directly in a situation of decision making. And so, this gives them a moral ground in the equal consideration of interests as well. In other words, the moral justification of the decision lies in the assumption that the suffering of animals should be calculated in equal consideration with the like suffering of humans, in a relevant situation. But nonetheless, how can the interests of the said animals exactly be defined against the pain according to the given version of classical utilitarianism? In other words, how should the pleasure of the said animals be measured against the pain? The interests of the animals are regarded here in terms of avoiding experiences of pain. The assumption insists that they must exist without experiences of pain. This can (for example) appear in the sense that they have a normal functioning in terms of taking in nutrition, growth, reproduction as well as attaining and fulfilling their appetites as far as possible.⁹⁷ This, in another sense, simply implies that the animals have the interests of existing with the normal physiological activities of life as long as there is no experience of pain. If the individual animals experience that the given interests cease, they feel pain. The questions, however, highlighted in dealing with the pain or the interests of the animals, are: Do animals feel pain? And, how can one know this? In an effort of finding a justifiable answer to the questions, Singer precisely points out that pain is a state of consciousness, which is part of a "mental event". And so, this event can never be observed. One can only infer that animals feel pain by looking at external objects of behaviours, or the physiological states of animals, in various forms. With such indications, the individual animals make attention either in a purpose of avoiding sources of pain or exposing feelings of pain.⁹⁸ This indicates that animals have "consciousness" that feels pain, and they exposes it through various senses of external or physiological activities. Singer thus brings on the view that animals feel pain which is revealed in various forms of external events, in the same way as humans do in similar situations. This is how he defines that the notion of pain or pleasure

⁹⁷ Des Jardins, 1993, p. 27, and Føllesdal (ed.), 2000, p. 85 - 86.

⁹⁸ Singer, 1975, p. 12.

appears as an essential criterion for measuring sufficiently the interests of the said beings in the equal moral consideration. He finds that this assumption fundamentally allow for ascribing equal moral status value to the non-human sentient animals. He accordingly considers that the sentient characteristic expands the moral dimension beyond humans to include the said non-humans in the non-anthropocentric sense. We therefore find that the sentient version of classical utilitarianism is essentially compatible with non-anthropocentrism.

- The assessment of fish interests:

Given the moral status value of the sentient animals, it is then useful for us to follow an example from the concerning situation in order to get a clear picture regarding the suffering of morally accountable animal interests. My main objective will be to use Singer's extensive account of the said utilitarianism in this regard. By calculating the sentient characteristic, I shall find that the dam ignores the moral status value in the considered situation. I shall finally show that the said version of utilitarianism stands firmly against damming the river. Accordingly, I take the suffering of fish in which we shall find that fish experiences various forms of unpleasant situation analogous to pain resulting from the dam. This suffering involves abnormality and declination of physiological activities or functioning, which leads to reduction in the normal birth rate of fish and so on. How then can the interests or suffering of fish be exactly known? I suppose in this regard it will be worthwhile to concentrate on a particular type of fish in consideration with the case study. The assumption might help us to estimate the pain of other fish as well. Accordingly, I shall consider a popular fish in the region known as "Hilsa". Traditionally it used to be known that the delta of the river Padma is a habitat for a huge number of Hilsa fish".⁹⁹ As a result of the dam this is no longer a fact. It is therefore sensible to take the suffering of this fish into account.

It is a normal conception that each individual member of animals adapts itself to a certain set of climatic conditions in which it lives and evolves further. This perception is similarly relevant to the Hilsa fish which essentially used to live under a certain set of climatic conditions of water. The quality of the water is one of them. The quality largely depends on a specific type of water stream, something which is directly connected with the natural tide of the river in the said region. This criterion is inevitably needed in maintaining not only the prospects of survival, but provides suitable ground for the breeding of the said fish as well. This is how this condition is directly attached with the interests of the fish in the sense of present and future accounts. The dam severely affects on this criterion by reducing the normal

⁹⁹ It is not necessary, but useful to repeat again that in Bangladesh Padma is another name for the river Ganges.

tide, and subsequently leads to an increasing level of salinity in the river's water. The fish experiences completely different and unusual circumstances as a consequence of the event, which has never happened before the building of the dam. Thus, in various ways the incident produces severe negative impacts on the relevant interests of the fish's life in terms of its physiological activities. This has ultimately emerged as a gradual reduction in the number of the existing population as well as a reduction in the normal birth rate of the fish. On the other hand, the reduction of fish favours significantly an increase in the population of other aquatic organisms (for instance insects, plants and so on) which fish would eat them. The increase of these elements adversely affects on the population equilibrium or the aquatic ecosystem in which the Hilsa fish belong. In the way this becomes a further unsustainable cause for fish functioning in the river.¹⁰⁰ The result of a deteriorating state in the normal activities clearly implies that fish is suffering gravely. This feeling of a displeasure state is directly relevant matter in the normative calculation of pleasure or pain, and so for the given account of classical utilitarianism. The said estimation therefore allows the interests of fish in the moral consideration. The estimation accordingly produces the perception that the decision of building the dam simply underestimates and so ignores the moral status value of the fish. This equally means that the protection of fish's interests is not considered in making this decision. By the same token one can examine the suffering of other fish, or other sentient animals, familiar to human beings in the region. Apart from the concerned case, Singer's animal ethic can for instance measure the interests of the sentient animals who belong to the vertebrate and who easily can be intercepted in the range of human observation.¹⁰¹ In other words, Singer eventually establishes the fact that the sentient characteristic essentially bring about an effective normative standard in composing the requirement of animal ethics, whereby he adequately estimates the interests of the said beings in equal consideration, or right direction. He therefore regards that the consideration of the said characteristic allows a justifiable ground for adopting classical utilitarianism in framing the given ethic. This is how Singer's animal ethic corresponds directly to the given form of utilitarianism.

- The justification for the equal consideration of animal interests:

Although one can examine the pain or the interests of animals by observing external signs of behaviour, nevertheless a crucial issue makes great attention in the discussion of Singer's animal ethics: How can the pain of animals be known equivalent to that of humans? A persuasive answer to this issue is genuinely important, because this will give the ultimate

¹⁰⁰ I am not interested in following a further discussion regarding the aquatic or marine ecosystem, as it is not the objective of this part of the discussion.

¹⁰¹ Singer, 1975, p. 12 – 13.

justification for allowing the interests of non-human sentient animals in an equal moral consideration or a non-anthropocentric account. The gravity of the matter emerges as a crucial factor for Singer too. He then assumes that to a certain extent, it is essential for him to find something common to human and non-human animals. What is this element? And, how is it significant to the concerning matter? In this regard he casts light on a particular section in the brain of human and non-human sentient beings. He points out that the non human animals have a nervous system which is very similar to the human one.¹⁰² The main function of it is to respond physiologically as human beings do when the animal is in equal circumstances as to which humans also feel pain. However, in this course of the discussion he acknowledges the fact that humans have a more developed part of the brain concerned with thinking functions, rather than with basic impulses, emotions, and feelings. These impulses, emotions, and feelings are located in diencephalon, which is well developed in many other species of animals, especially mammals and birds.¹⁰³ They respond in much of an identical way in similar situations in which they feel pain or experience suffering. Accordingly, the nervous system has capacity to feel pain and exhibits it in similar ways of physiological or external behavioural signs. Thus Singer justifies the argument that animals have the same nervous system to feel pain or suffering analogous to pain, and that it appears in the same manner as humans do. Therefore, the suffering of pain or the interests of the said animals must be viewed in equal consideration.

Singer's justification for the equal consideration of the said animal's interests does not necessarily imply that he did not receive any criticism regarding the matter. One of the relevant criticisms can be followed in conformity with the current flavour of the discussion. Accordingly, human beings can express existence of pain by speaking out in language, while animals cannot. Why then should the suffering of an animal's pain be equally measured? In response to this criticism, Singer figures out that every human being do not have equal capacity to express pain in language. He particularly points out that human infants and young children are unable to use language in a situation where they feel pain. Should it then be denied that a year old child feel pain? No one will do so. The child normally displays pain by external behaviour in various ways. An adult person can sufficiently understand it, in the light of his own behaviour. Equally the person can also understand the behavioural signs of animal pain in a similar manner. This is therefore not an issue of what ability human and non-human animals might possess. The main thing is here that they have the characteristic of equal consciousness of feeling pain and exposing it in the same behavioural signs, in the same situation. Accordingly, Singer comes up with the strong claim suggesting that one should not

¹⁰² Ibid.

¹⁰³ Ibid. Singer extensively discusses here about the common origin of the nervous systems of non-human and human sentient animals.

explain the feelings of an individual animal's pain in a different way. He therefore infers that there is no reason to deny the assumption that non-human animals feel pain equivalent to that of humans. The behavioural signs are accordingly an important element in estimating the pain. This is how Singer finds that the equal consideration of the sentient characteristic provides a firm ground to measure the interests of human and nonhuman in the non-anthropocentric sense. He thus cements the view that the equal consideration of pain or pleasure is an essential element which can sufficiently measure the interests of the animals in a situation where it is of direct concern for them.¹⁰⁴ The message which stems from the said argument actually emphasizes that the signs of physiological or external activities of fish or other sentient animals imply that they experience pain as result of damming a river. According to the given version of utilitarianism then, the decision to build the dam is not to be regarded as the right one at all. The dam simply produces total suffering or pain rather than pleasure to non-human sentient animals in the region. This is how we find that Singer's animal ethic, or the classical utilitarianism of Bentham, is a powerful argument against building a dam on a river. This is equally true for the Farakka dam as well.

- The limitation of Singer's animal ethic:

As we have found, Singer's extensive account of the sentient criterion allows the interests of the individual members of many animal species for moral consideration, and so for protection as well, in the ethical decision making. Accordingly, the assumption lays out an initially promising account for extending the moral concern to some important individual animals which in the situation are threatened with the result of such human action. But nevertheless, his individualistic account of the animal ethic is not capable of measuring the situation of others who are not entitled with this criterion. Moreover, the approach is mostly concerned with the animals that are easily intercepted in human's observation. Therefore, the assumption cannot provide the basis for a comprehensive guideline for evaluating the situation for many other environmental elements which are seriously affected by the dam. They are, for instance; various types of living organisms, wild species, endangered animal species, wild forest as well as collectively the whole ecosystem or ecological community in the region. We thus find that the sentient approach fails in providing a satisfactorily complete or comprehensive theory which can allow the said issues into moral consideration. This is why Singer's extensive account of classical utilitarianism is not regarded as a full-fledged non-anthropocentric version of environmental ethic. It is in other words known as the individualistic account of anthropocentrism. Although Singer's animal ethic has such limitations, nevertheless he persuasively argues that the interests of the said individual animals must not be ignored

¹⁰⁴ For more information with regard to Singer's views against the criticisms related to the equal consideration of animal's pain, see: Ibid. p. 14 -16.

resulting from such an environmental crisis. Thus the sentient approach sets out the initial stage, or at least put finger on the further route for discussing other problems in the environment following from the dam. Therefore I have found that the individualistic account of the sentient approach, at least have an important place in calculating the said situation in the light of non-anthropocentrism. Within such a positive account, we shall in the following discussion, however, look for a broader view which precisely considers the various aspects of the said environmental or ecological problem, according to the said version of environmental ethic.

C. The dam and the eco-centric view as the complete aspect of non-anthropocentrism:

Once we are concerned with various facts of the ecological implication of the dam in a complete sense, it is then essential for us to allow such a broader assumption which sufficiently includes all aspects of the natural environment into the framework. That is an eco-centric view of the natural world. This assumption indicates that ecology must play a primary role in understanding the facts as well as finding the value of the natural world. This attempt will not only figure out the ecological facts, but in a complete sense also provides a genuine ground for accounting the moral concern following from the adversarial environmental affect of the dam. In a way the assumption will eventually facilitate a moral ground for making an alternative decision model, which will equally protect the morally accountable value or interests of the entire natural environment in relation to such a situation. Extending the standpoint of our discussion from the individual organisms to the eco-centric approach requires us to find answers to the following leading questions: How can we know the ecological facts of the said region? What would be the accountable element of which to allow into moral consideration? And finally, what should be an alternative decision model or action in accordance with the morally acceptable term following from the given sense? The sensible answers to these questions will, in the following discussion, be regarded as significantly relevant in order to know the environmental impact of the dam on its various objects as well as knowing the total account of it. The assumption will further lead to estimate the object into moral consideration. This will, in another sense, eventually help us to find out the reason why the dam is not to be morally acceptable and so for finding a moral protection for the said environment.

- The eco-centric view of Aldo Leopold:

In an attempt to examine and find suitable answers to the issues considered in the above paragraph, it is useful for us to allow an eco-centric view which is concerned with various

matters of the ecological situation in a comprehensive and complete sense. This view then will be relevant in dealing with our considered case. Accordingly, I find that the holistic or eco-centric approach of Aldo Leopold (1887-1948), will be the most sensible one and the one most consistent with reference to the situation. The following reasons can be addressed in this regard:

- a. He considers the ecological events of the natural environment from a total point of view.
- b. He puts major emphasis on explaining facts of the environment according to the said standpoint.
- c. His eco-centric discussion shows a way of finding the moral value of the ecological facts or the relevant environmental situation, and so further urges for a moral protection of this value.
- d. He mainly examines the facts from a non-individualistic and non-anthropocentric point of view.
- e. His moral account of the eco-centric approach appears as not precisely adhering to a particular normative philosophical theory, but this remains an open discussion in moral philosophy so far.

On basis of the given factors mentioned in the above, I consider that Leopold's holistic version of the ecological discussion will significantly be compatible in dealing with the said environmental situation. The interesting matter is that he is not a philosopher, but a forester and wild life ecologist by profession. This background does not sufficiently support him to address various ecological affairs purely in a philosophical manner. But nevertheless, the profession has supported him enormously in order to obtain substantial knowledge concerning the ecological world. This knowledge he subsequently puts in the shape of essays. The essays finally appear in form of a book called, "A Sand County Almanac" published in 1949. The book is composed of three sections. In part one and two, he portrays the ecological ideas, something which appears in a poetic and abstract sense. The last section contains a summary of the arguments conveyed in the previous sections. We notice here a relatively more systematic and concrete discussion compared to the previous parts regarding the ecological ideas as well as its principles. A famous essay called, *The Land Ethic* is situated in this section. The essay explicitly focuses on description of ecology as well as finding a moral direction.¹⁰⁵ This is why it is regarded as a pivotal section of the whole book. In containing such valuable information of the natural environment, the book receives great recognition in the discussion of environmental philosophy. The contemporary environmental philosopher J. Baird Callicott can be regarded as a leading interpreter of Leopold's book. His main task is to interpret the informal discussion of ecology and moral aspects of the book in a systematic way. In this consideration, he gives a major focuses on such areas of *The Land Ethic* in great detail. This discussion has recently been published in several books. In understanding the

¹⁰⁵ Callicott (ed.), 1987, p.8-10, and Callicott, 1989, p. 5-6.

given aspects of *The Land Ethic* I shall primarily focus on his discussion, but I shall also consider other philosophers' views in accordance with the requirement of the discussion. In the following step I shall at first concentrate on the relevant facts of ecology as part of accounting for the environmental impact of the dam. Afterwards, I shall focus on the ethical aspect of *The Land Ethic* which follows from the discussion of ecology.

- What is ecology?

Once we are concerned with evaluating a total account of the ecological effects of the dam, then the most crucial question follows: How can we effectively know such effects? In finding answer to this issue, Leopold states: "That task has fallen to the new science of ecology".¹⁰⁶ Hence, Callicott considers that the scientific account of ecology will form a persuadable ground for explaining the ecological ideas of *The Land Ethic*. Ecology has been considered a basic tool for investigating adequately the various issues of the natural environment. Ecology actually represents a formal discussion of knowing scientifically the events of the whole natural environment in a relevant situation. Ecology, in this sense, does not differ conceptually from the natural environment. Their discussion materials lie in the same matrix. I shall therefore use the term ecology or natural environment in the same manner, depending largely on the context of the discussion. Thus I find that Callicott's sense of ecological discussion will be consistent with the purpose of knowing the ecological effects of the dam. What then is ecology in the said account? How can it be explained in connection with the said situation? And, what would be a suitable direction in doing so? I shall primarily search for answers to these issues in the ecological aspect of the following discussion.

Let me first focus then on some basic and relevant facts following from ecology. Ecology is the study of relationships between living organisms and non-living organisms in a region. The relationships bind both organisms - plants, animals, air, soil and water - into a constant interaction.¹⁰⁷ In this way, the arrangement of the organisms and their relations to one-another is constituted by a coherent whole, or a complete natural process generally known as an *ecosystem*. Thus the organisms or members are related to the ecosystem. According to this, living organisms cannot survive as an isolated entity without being supported by the physical organisms to which they are related in the system. The interdependencies and interconnectedness between the organisms make the way for considering the ecological discussion as holistic or *holism*. This is why the eco-centric approach is a holistic rather than an individualistic one. However, the ecological relationships define nature or the

¹⁰⁶ Callicott in Zimmerman (Gen.ed.), 1993, p.110.

¹⁰⁷ I am here concerned with the terrestrial view of the ecological relationship between the given elements.

characteristic of the holistic ecosystem. Accordingly, the section which studies closely this event, or the evolutionary-ecological relationships of the whole ecosystem, or simply the ecological community, is known as the evolutionary aspect of ecology. Thus the notion of *evolution* is inevitably associated with the framework of ecology.¹⁰⁸ Struggle and death lie at the very heart of evolution. However, the evolutionary account of ecological relationships in a way formulates a social picture, or reveals a functional feature of the whole community. Leopold identifies this functional feature of the ecosystem as a “Land” or “The Land Community”. He states: “That land is a community is the basic concept of ecology, - - - (viii)”.¹⁰⁹ Accordingly, all individuals including humans are regarded as normal members of the land community. In other words, human beings represent an equal member of the community. Humans therefore have no privileged status in the said account. Hence, the ecological discussion actually puts a non-anthropocentric essence in characterizing the ecological community.

The presence of the evolutionary-ecological mechanism or the functional characteristic virtually attributes a living entity to the whole land community. The land is then no longer being viewed as a passive, or something like a dead community, but endowed with a living soul in a way. Hence, the land community is identified as a living whole, or in Leopold's term: One humming community.¹¹⁰ Flavoured with this qualification, Leopold interprets the land community in the sense of a *biotic community*. Each member has so far a specific or social role in maintaining the overall functioning of the community. By virtue of the functional characteristic, the environmentalists or ecologists can closely study the healthy and unhealthy, or the good and bad states of the whole biotic community. This is how Leopold finds that this functional account will be significantly relevant in order to calculate the various facts of the community concerning an environmental situation. I therefore, find in this regard that it will be helpful for me to concentrate on the functional account of the biotic community, as the assumption not only will provide me with adequate knowledge regarding the existence of the members, but also the various activities which take place between them, which has great impact on maintaining the functional criterion of the said community.¹¹¹ In other words, this will allow me to know how the dam jeopardizes the fulfilment of the said activities between members of the community in an unexpected sense, which actually destabilizes the functioning criterion of the biotic community of the Sundarbans in terms of integrity, stability, and beauty, or the healthy functional state of the whole ecosystem in the region. As

¹⁰⁸ I have considered the notion of ecology from the following books: Callicott in Zimmerman (Gen. ed.), 1993, p. 116-121, and Des Jardins, 1993, p. 207.

¹¹⁰ Callicott, summer 1982, vol. 4. nr. 2., p. 173.

¹¹¹ I have considered certain aspects regarding the functional account of the biotic community from the following source: Des Jardins, 1993, p. 181-82.

described in the case study, the members of the community are the Royal Bengal tiger, plants, trees, birds as well as other living and non-living elements. The functional model of the community defines that the importance of the Bengal tigers, or any other natural objects, lies in its role or its activities in maintaining the stability and integrity of the whole ecosystem. The perception further insists that the destruction or exploitation of such an organ must be investigated according to the given scale of the community.

- A functional structural view of the entire ecological community:

Given the role of the ecological relationships between the natural elements, this assumption accordingly has raised the following questions in relation to the functioning of the entire biotic community in the region. How can the role of the individual organs or the ecological relationships be exactly known according to the functional model of the said community? And, what actually happens to the relationships in the normal functional state of the object as a result of the dam? Leopold points out in this regard that it will be useful at first to focus on a complete functional structural picture of a land community in view with the ecological activities between the members of the said object. In this reading, he precisely notices that two basic ecological factors, in the sense of *food chain* and *energy flow*, have an enormous role in maintaining a continuous and smooth functioning of the biotic community. In consideration of their importance, they are known as the *economy of nature* or the life supporting element of the said community. On basis of the given considerations, he assumes that we in fact can make a way of examining and so eventually finding the impact of such human action on the fellow members as well as collectively the whole community in a relevant situation. Accordingly, I shall look at the next step of Leopold's accounts regarding the functional structural view of a land community in conformity with the said two factors. I shall in this regard consider certain facts which follow from the given situation. In a way, this will further help me to look at how the dam seriously degrades the stable function of the whole ecosystem in the region.

- The land pyramid and the food chain:

In an account of estimating the ecological relationships of a functioning biotic community, Leopold draws a complex image of a *land pyramid* or *biotic pyramid* in the sense of a highly organized structure composed of biotic and abiotic elements through which solar energy flows.¹¹² He represents the structure by drawing a pyramid consisting of layers, where the

bottom is soil; a plant layer rests on the soil, an insect layer on the plants, a bird and rodent layer on the insects, and so on up through various animal species including humans to the apex layer, which consists of the larger carnivores. Leopold figures out that each successive layer depends on those below it for food and often for other services to those above. Thus species are arranged in layers by reference to what it eats and by what eats it. In this account, there must be numerically more members of a prey species than its predators (tigers and lions are for instance regarded as predators). Otherwise the predators would simply starve. Similarly, there is plenty supply of plants to feed to the countable number of herbivores (deer, rabbits, wild cows are for example herbivores). This is why, proceeding from the lower layer and upwards, each successive layer of species decreases in numerical abundance. Accordingly, the population of species is arranged by the availability of their supply of food. The arrangement of species in the system thus forms a pyramidal shape.¹¹³ The lines of dependency for food and other relevant services are called food chains:

Each species, including ourselves, is a link in many chains. The deer eats a hundred plants other than oak, and the cow a hundred plants other than corn. Both, then, are links in a hundred chains. The pyramid is a tangle of chains so complex as to seem disorderly, yet the stability of the system proves it to be a highly organized structure. Its functioning depends on the co-operation and competition of its diverse parts (215).

In accordance with the above facts of the food chains, I shall now consider a food chain with reference to members of the ecological community of the Sundarban forest. The assumption will support me to know the role the individual organism play in activities of the food chain as a part of maintaining the healthy functioning of the entire ecosystem. The food chain, for instance, can be followed with the given composition: Soil - plant - deer - Bengal tiger. Let me assume that the arrangement of the relative populations of tigers, deer (or grazer animals) and plants are figured out by the habitat's capacity, or according to the structural notion of the land pyramid of the region. The viability of the arrangement further indicates that the number of deer and tigers are accounted proportionate to the availability of their supply of food linked within the food chain. In a way, they constitute a stable population in the forest. But nevertheless, this is always not the case. In many situations it appears that unchecked population or overpopulation itself, in fact threatens the stability of the deer population or the

¹¹² I understand the term “land pyramid” in the sense that it does not differ conceptually from the following terms: land community, ecological community, ecosystem, biotic community and so on. Each term will be understood in the perspective of a “whole”. For example in the sense: ecosystem as a whole or the whole ecosystem. In some cases, it might appear that I refer only to “the ecosystem” in stead of telling “the whole ecosystem”. This will be considered for the sake of maintaining the contextual feature of a sentence, but is to be regarded as the “whole” aspect of the said term.

¹¹³. Leopold, 1968, p. 214-220. In the considered pages Leopold describes various aspects of the land community which compose a section called “The Land Pyramid”.

integrity of entire ecosystem within which they live. For example; sometimes over-abundance of deer can make it impossible for their food plants to survive or reproduce, something which might create a considerable problem in the integration of the said ecosystem. But nevertheless, the ecological relationships of the functional ecosystem have its own contribution in solving the problem. When the deer population increases, plentiful of food is then available in the food chain for the tiger, and this makes it relatively easier for the tigers to obtain food. In this chain, deer are herbivores and prey of the tigers known as carnivores or predators. This is their social role in the given space. Thus the tigers stabilize the overpopulation of the grazing animals.¹¹⁴ Similarly, we find that the Bengal tiger's role is not to be characterized simply as relating to catching the prey, but also being identified as insuring a stable number of the deer population in the ecosystem. In other words, the tiger's role in the food chain contributes significantly to the integrity and the stability of the ecosystem of the forest. Thus, the food chain evolves as one of the main ecological factors in maintaining the stable functioning of the ecosystem in the region.

- The energy model:

In the above discussion, Leopold clearly figures out who the species are, and how the interaction between two different species, or the *symbiotic* relationships in the food chains, contributes to a smooth functioning of the land pyramid. Moreover, we perceive from the assumption ensuing from the example that the importance of an individual organism lies in its role of insuring the stability and integrity of the living organisms in the food chain. However, Leopold perceives the fact that ecological relationships precede from one event to another. Accordingly, he points out the next event of the relationship, which follows immediately after organisms receive food in the eco-systemic process. The event is identified as energy flow. Hence, energy flow emerges as another basic factor characterizing the stable functioning of the land pyramid, or the ecosystem. A description of the ecosystem, accordingly, begins with the involvement of solar energy. Solar energy enters into the system through the green plants, which drives water and other liquid nutrition throughout the plants. The plants then, enriched with such energy rich material, pass through plant-eating animals to omnivores and carnivores. Thus the ecological relationships between abiotic and biotic elements occur directly in the energy flow. Accordingly, the abiotic or physical elements become equally important entities in the said route. In this consideration, ecologists are capable of reading the functional state of the whole ecosystem solely by virtue of the energy flow, as it follows throughout the organic and inorganic organisms of the said object. According to this process, most of the solar energy, however, disappears in the atmosphere as a result of passing through

¹¹⁴ I consider certain aspects regarding the relevant ecological relationship in the food chain, following from what is called: 'Predator – Prey Relationship'. For details regarding this, see: Des Jardins, 1993, p.186-189.

each trophic level in the food chain. Only a tiny fraction of the solar energy finally converts to biomass by green plants remaining in the corpse of predators, animal feces, plants detritus, or the dead organic material that is garnered by decomposers as worms, fungus, and bacteria.¹¹⁵ They recycle the participating elements and degrade into entropic equilibrium any remaining energy. Thus the process again begins to activate the various components of the ecosystem.¹¹⁶ According to this interpretation of the energy model, Leopold reads:

Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is dissipated in decay, some is added by absorption from the air, some is stored in soils, peats, and long lived forests; but it is a sustained circuit, like a slowly augmented revolving fund of life (216)

The velocity and character of the upward flow of energy depend on the complex structure of plant and animal organisms, much as the upward flow of sap in a plant depends on its complex cellular organization. Without this complexity, normal circulation would presumably not occur. Thus plants are able to trap the sun's energy and letting the energy pass through animals. Then this complex structure means:

...the characteristic numbers, as well as the characteristic kinds and functions, of the component species. This interdependence between the complex structure of the land and its smooth functioning as an energy unit is one of its basic attributes. (216)

Even though the arrangement of the various species appears in a complex composition, the flow of energy makes it possible to bring them into a highly organized relationship in maintaining the smooth and stable functional structure of the whole land pyramid. This is how Leopold finds that the role of the energy flow in the ecological relationships is another essential factor in identifying the smooth functioning of the whole ecosystem.

Given the role of the energy circuit in the ecological relationships, Leopold further looks briefly at normal evolutionary changes or developments and its impact on the said circuit of the biotic pyramid. He finds that the trend of evolutionary changes tends to strengthen and diversify the smooth functioning of the ecosystem.¹¹⁷ Accordingly, he explains that the evolutionary changes are a self initiated organizing course of the ecosystem which occurs overtime. The changes occur slowly and are being regarded as a local event in an ecosystem

¹¹⁵ By the view of biomass, I understand here the total mass of organic matters present at one time in an ecosystem.

¹¹⁶ In order to attain the perception regarding the energy model, I consider the following books; Callicott in Zimmerman (ed.), 1993, p. 123, and Des Jardins, 1993, p.179-180.

¹¹⁷ It is useful here to mention that the trend of evolutionary ecological relationships do not have as its objective to attain the normal functioning of the ecosystem, since the evolutionary relationships is ateleological.

of a region. When a change accordingly occurs in one part of the energy circuit, many other parts naturally adjust themselves to it. Natural species extinction, for instance, occurs as a part of such evolutionary changes. In this event a species is replaced by virtue of natural exclusion or evolves into another form. These losses or changes have no affect on the normal functioning of the ecosystem, as it is a natural outcome of such course. Therefore, the extinction of a species is natural, according to the evolutionary ecological development or functional feature of the ecosystem. This change then will not necessarily obstruct or divert the flow of energy. The event is rather viewed as part of the further growth or development in the evolutionary ecological relationships of the ecosystem. As Leopold accordingly says, “. . . evolution is a long series of self-induced changes, the net result of which has been to elaborate the flow mechanism and to lengthen the circuit” (216-17). In this way the process of evolutionary changes are being referred to as strengthening and elaborating the energy route and so is itself viewed as part of the ecological relationships in sustaining the function of the biotic pyramid. Therefore, the energy route has a vital role, not only in composing the smooth relationships between the organisms, but also in accounting for further development in the said ecosystem. Thus Leopold concludes this part of the discussion by stressing that the constant stable situation in relationships between objects of the food chain and the energy cycle, ultimately represent the essential ground for maintaining a smooth functioning in the complex structure of the entire land pyramid. This is why in the said discussion the food chain and the energy cycle are economy of nature.

- The dam and its effect on the functional feature of the entire eco-system:

After estimating the role of the food chain and the energy circuit in the stable functional structure of the entire ecosystem, Leopold finally addresses the effect of human actions on the said object. He points out that human actions, particularly those engineered by technology, brings unexpected and tremendous changes in the total functional picture of the ecosystem. Accordingly he cites this: “Man’s invention of tools has enabled him to make changes of unprecedented violence, rapidity, and scope” (217). Hence, by this he provides a room for looking closely at the adversarial effects of the Farakka dam, which brings about unprecedented and considerable changes in the functional state of the entire ecosystem in the region. Leopold evaluates the gravity of this matter by focusing first on the state of the trophic relationships in the food chains. He argues that the result of such type of human action severely reduces the living activities in the food chain, and so is blamed for bringing on irreparable changes in the function of the land pyramid. How can then this assumption be explained in consideration with the said situation? Finding the answer requires us to recall once again the example of the food chain (soil - plant - deer - Bengal tiger) in accordance with the current context of the discussion. The assumption suggests that as a result of the dam, the soil is no longer

adequately fertilized for an abundant growth of plants in the forest, because of the lack in the normal flow of water needed for soil nutrients, and so for plants too. This causes rapid deforestation in the habitat of the region. Subsequently, food becomes scarce for the deer population or the grazing animals. Accordingly, some of them die, and some move from the original habitat towards other places.

This has obvious impact on the predators or the tiger population as well. Consequently they encounter unexpected problems in hunting animals needed for food, as well as resulting in a considerable reduction of the ecological niche, following from inadequate amount of wild plants in the said habitat. The event is completely contrary to the social or symbiotic relationships normally taking place in the chain between plants and deer in one way, and deer and tigers in the other. The continuity of such problems virtually leads to a dramatic reduction in the tiger population, and the incident can even create the possibility of extinction of the entire population. The reason for this to occur is that the tiger population normally consists of a small number of animals, as it is situated at the top layer in the food chain of the land pyramid. Moreover, the tiger is regarded as one of the endangered species in the region. Therefore, there is genuine ground for a possibility of complete extinction of the Bengal tiger as a result of this situation. We can thus perceive the fact that the impact of the dam not only has the possibility of causing the removal of the tiger population, but also produces a significant reduction in the population of the other living organisms in the food chain as well. The dam is therefore to be blamed for significantly worsening the ecological activities in the food chain. Leopold measures such matter in this manner:

The larger predators are lopped off the apex of the pyramid; food chains, for the first time in history, become shorter rather than longer. Domesticated species from other lands are substituted for wild ones, and wild ones are moved to new habitats. (217)

According to the above statement, this precisely maps out the effect of such human action which brings unpredictable changes in the arrangement of the normal trophic relationships in the food chain. The event consequently develops a new and completely unprecedented or unfamiliar change, other than one happening in normal evolutionary ecological relationships in the food chain. This new development is then in fact to be identified as “devolutionary” or unhealthy, according to the normal standard of the given relationships. The new situation indicates that in the said ecological community the overall integrity and diversity of the wild species in the activities of the food chain are unexpectedly and significantly crippled by the dam. Integrity is understood here as the historical mix of the total number of living species including exotics capable of existing across time, while diversity is composed of the variety of species in the said habitat or the ecological community. Accordingly, the new situation is so unexpected, the ravages of its effect cascades throughout the trophic relationships between the biological organisms which are adapted to the given set of characteristics of the

functioning ecosystem. In other words, the event badly damages the integration, genetic diversity and the speciation of the organisms in the habitat. The ecosystem has no means by which to damp out the effect. Thus the dam produces a devolutionary effect on the evolutionary ecological relationships in the food chain of the biotic community.

As we have seen in the above paragraph, the dam significantly degrades and so impoverishes the normal interaction of the food chain. The event then directly spill over from the food chain to the energy circuit, according to the nature of the ecological relationships in the ecosystem. On this account, Leopold examines another unexpected change which inflict on the energy route following from such human action. He insists that the lack of water depletes the storage of nutritional energy in the soil which effectively deranges the energy circuit, and so eventually deteriorate the capacity of the ecosystem for self renewal. In this consideration, the following explanation can be given in conformity with the ecological relationships of the energy circuit. Dry or nutrition less soil is no longer considered to maintain an adequate fertile state, since fertility is normally regarded as an essential condition in order to provide the ability for soil to receive and store energy from the biomass, which the biomass then recycles again through the organic elements in the entire ecosystem. This normal process of the energy route is seriously disturbed following from the drought of the soil, and further produces radical reduction in the organic population of the food chain. Accordingly, the reduction of the organic materials or the animal population simultaneously contributes to reducing activities in the biomass, while sufficient amount of organic materials or biomass is normally regarded as an essential element in order to store energy in the soil. In this way, the soil is ultimately deprived of the capacity to receive adequate energy from the organic materials which normally support to build as well as maintain the fertile state of the soil. Moreover, dry soil is not supportive to form the ecological interactions in the biomass. Thus drought and insufficient organic materials together, indeed contribute to create an infertile state in relation to receive and store the energy in the soil. Leopold characterizes this as erosion¹¹⁸. The soil is then not able to recycle sufficient energy in order to support the living channels in the ecosystem. This is how the dam contributes to a depletion of the energy in the soil and so generates derangement in the entire energy flow throughout the living and non-living channels in the ecosystem of the region. This event is normally regarded as an essential criterion for constituting self-renewal or the sustainable functioning of the land pyramid. Thus the dam, by exploiting the normal water course, severely downgrades the smooth functioning of the entire ecosystem. In a way this creates unexpectedly bad effects on the overall landscape of the biotic community. This is why the dam is identified as creating an unhealthy functional state in the natural environment of the region. I, therefore, have found that Callicott's scientific interpretation of Leopold's holistic ecological discussion is

¹¹⁸ Leopold, 1968, p.217.

genuinely consistent with regard to evaluating the said environmental crisis following from the dam in its total form.¹¹⁹

D. The moral status of the entire ecosystem:

In the foregoing section of the discussion, we have seen that the scientific explanation of the functional state of the entire ecological community, sufficiently inform us regarding the unexpected environmental changes or the crisis resulting from the dam. Hence, in this situation the dam is regarded as an object of ethical concern. In which way then, can the unhealthy state of this ecosystem be accommodated into moral discussion? In response to such crucial question, the moral philosophers face a big challenge regarding how to map out, or enlarge the ethical base allowing this factor to be set out in the moral framework. The assumption will permit us to bring exactly into line whether the dam is morally blameable or unacceptable as a result of producing such crisis in the region. As a part of facilitating the discussion in this dimension, the threshold issue is: Who or what in the ecosystem has anything to complain against the dam which can provide a justifiable ground for concerning the moral world? For the sake of finding a precise and persuadable answer, the question can further be classified in the following senses: Who or what has moral status in the said community? And, how can moral status or considerability be justified? Leopold can be regarded as the first person who describes not only the functional structure of the ecological community, but also considers the facts following from such human action on the said object in a broader perspective of moral finding. He discusses the matter informally in the moral aspects of *The Land Ethic*, but it does not lead to a compelling philosophical argument. Hence, Callicott, as the first environmental ethicist, takes this abstract ethical material of *The Land Ethic* into account in order to explain them in a proper philosophical sense.

In examining the philosophical foundation of Leopold's land ethic, Callicott notices that it is traceable through the moral philosophy of David Hume (1711-1776) and Adam Smith (1723 - 1790). They share, in this regard, a common view as being members to the school of Scottish philosophy of the eighteenth century. The bottom line of this view implicitly insists that the subjective *feelings* of human beings are itself a fundamental and sufficient criterion in order to judge and value a situation from a moral point of view.¹²⁰ According to Callicott, Charles

¹¹⁹ It is useful to mention here that although Leopold or Callicott successfully explains the effect of such human action which brings severe unexpected change in the entire functional structure of the land community, none of them provide any specific information on what exact consequence would further follow from happening the change on the whole eco-system, in the ecological descriptive section of *The Land Ethic*.

¹²⁰ The notion of feelings can equally be interpreted in the senses of affection, sympathy, benevolence, sentiment and the like. I shall use any of these terms according to the context of the following discussion.

Darwin (1809-1882) explains that such feelings are essentially associated with the survival or the functional account of the whole ecological community. Given the Darwinian explanation of the Humean account, I shall show that the feeling based considerations normatively attribute moral status value or intrinsic value to the whole ecological community in the said situation. The assumption will further permit me to argue that in the decision to construct the dam, the moral status of the said community is simply discounted, and so the dam is not morally acceptable. Moreover, I shall also find that the considered ethics provides a vital foundation for considering the community in the non-anthropocentric and non-individualistic sense of the environmental ethic. I shall in the following discussion first look at Hume's consideration of the feeling based ethical notion, as the assumption has prime role in constituting the moral status of the entire community in the given sense.¹²¹

- The feeling based ethics of David Hume:

Hume is primarily not concerned with pleasure, pain, reason or interests as basis for intrinsic value judgement of an object. He rather considers that human reactions towards a given object affect the value judgement. Such disposition, according to him, serves a wider accessibility to judge an object in a moral account. This assumption then provides the fundamental aspect which accommodates the value judgement of an object into wider sense of moral consideration.¹²² Hence, I consider Hume's wider account of the value judgement to be essentially consistent with the given environmental situation or ecosystem, in finding the moral status of the object. In a point of departure, the fundamental issue following from Hume's enquiry concerning value judgement in morality is: How should the image of an action or object be evaluated as a moral phenomenon? In finding a persuadable answer to this issue, he considers a series of arguments in his famous book called "A Treatise of Human Nature", published in 1739-40. He discusses these arguments in book 111, part 1, section 1 and 11 of the treatise.¹²³ The central piece of his argument indicates that the moral judgement of an object rest fundamentally on a subjective account of feeling based value, and is not in the first place resulting from the exercise of reason. The moral approval of such feelings lies in a disposition of the social context in a situation. Armed with this view, I shall first look at

¹²¹ It is useful to notice that although Callicott regards the discussion of the feeling based ethics as a part of the common view of Hume and Smith, nevertheless we notice in many of his relevant writings that he explains the assumption by mentioning only Hume's name or from the Humean point of view, in stead of referring to both. Similarly I shall follow the same style in explaining the said ethic, but this should be regarded as their common view.

¹²² See, Norton, 1987, p. 172-173, and Ellis, 1992, in Nardin and Mapel (ed.), p. 158-159.

¹²³ Regarding the said section of Hume's moral philosophy, I have followed the book: Mossner (ed.), 1969, p. 507-527.

how he considers the said feeling in respect of the moral judgement pertaining to the image of an action. Thereafter, I shall closely look at the way he values such feeling in moral form. Accordingly, let me start by regarding the way Hume accounts how an individual forms moral judgement on the basis of a subjective account regarding the image of an action. He points out that the individual distinguishes between good and evil, or what is right and what is wrong, in the assessment of the action. According to him, the judgement that an action is good or bad primarily lies in the analysis of the subjective feelings which are projected onto the action. Actually the feelings of approbation or disapprobation affectively “color” or shape the judgement. In other words, the goodness and badness does not lie in objective qualities of the action, in the way red is a quality of spilled blood. It is the feelings, and not reason, which spontaneously arise in the original fabric of an individual’s nature upon the contemplation of the action. Therefore, the subjective feeling is the ultimate criterion for judging morally about the action.

In a purpose to further clarify the prime role of feelings rather than reason in moral judgement, Hume takes an example of wilful murder into account. The image of such action is supposed to be vicious. In allowing such moral judgement on the action, he states:

You never can find it, till you turn your reflection into your own breast, and find a sentiment of disapprobation, which arises in you, towards this action. Here is a matter of fact; ’tis the object of feeling, not of reason. It lies in yourself, not in the object. So that when you pronounce any action or character to be vicious, you mean nothing, but that from the constitution of your nature you have a feeling or sentiment of blame from the contemplation of it.¹²⁴

According to Hume, the alleged evil of the action is, as it were, a projection of the quality of that subjective feeling or reaction which originates within us when we witness or imagine the murder. The very “feeling” then constitutes the said judgement regarding the action. This is how he finally concludes that subjective feeling, not reason, is the ultimate standard of defining goodness and badness, or the moral judgement of the action. In similar way, one can reach at the moral judgements regarding other actions too, for example, that charity is good; that injustice is bad, and so on.

The bottom line of Hume’s argument indicates that the subjective feelings are the ultimate criterion for judging the rightness or wrongness of an object. Consequently, the assumption is immediately caught up in accusation of radical relativism, and so cannot be regarded as a universal or absolute view. Hume did not agree with the accusation. Rather, he claims that the feeling based ethical view stems from both a natural and universally accountable element of human nature. He accordingly insists that the notion itself has essential and sufficient

¹²⁴ . Ibid., p.520.

normative force to persuadably judge and value the image of an action or situation in moral sense. Given such claim from the viewpoint of Hume, this urges us to take the following relevant factors into account: In which way can the said feeling be addressed in the moral space? What is needed for allowing the assumption into the moral space? And, how can the morally accountable value of the feelings be defined? Let me try to find the answer to these questions. Indeed, Hume's notion of the subjective feeling evolves from the consideration of a psychological section which is common to every normal human being.¹²⁵ This implies that the feeling, like a physical organ, is an essential part of the psychological structure of a person. However, the nature of the psychological feeling is slightly variable from one person to another, but common to all people. However, we can sometimes notice that there are some exceptional cases. Some people, for instance, are physically freakish or maimed. Similarly there may be people who are lacking one, several or even all psychological features to one degree or another. Despite the exceptional cases, we can still speak about the normal psychological feelings in human nature, just as we can speak of the normal, correct physical constructions and conditions of a person. In other words, these feelings are so naturally rooted in the constitution of normal human nature that it is completely impossible to ignore or extirpate them. Hume, accordingly, figures out that the subjective feeling is essentially both natural and universally distributed among human beings. The feelings then have in itself the necessary and sufficient normative force. The assumption therefore permits him to ascribe intrinsic value to the subjective feelings of humans. This is how the notion of the subjective feelings is accommodated into the discussion of the moral world. Hume's ethical subjectivism, therefore, does not necessarily imply that right and wrong, good and evil, virtue and vice are viewed as arbitrary, nor does his theory collapse into an emotive relativism.

According to the above discussion, following from the ethical or axiological subjectivism, it appears that the ascription of all value virtually lies in the subjective provenance. Hume is well aware that such unfavourable assessment may arise, as the intrinsic value is not being construed objectively. It therefore turns into a central task for him to find how the subjective moral sentiment can serve as the basis for a universal account of morality. A crucial requirement must be satisfied in order to allow the said value into the domain of moral philosophy. With this consideration, Hume classifies the proper object of the sentiment in two senses for the purpose of moral analysis. In one way, sentiment is concerned with one's self-love or self interest. Apart from this, once several sentiments are gathered under the head of self love it is called the *social sentiments* in relation to an object. On the other hand, the sentiment of morality is directed towards another being, or beings other than one self, as the direct object. He thus classifies and so defines the point that all value may evolve from the

¹²⁵ My consideration of Hume's discussion regarding moral value account of the subjective feeling, follows from the following sources: .Mossner, (ed.), 1969, p.525-526 and Callicott, summer 1982, , vol.4, no.2., p.167-168

subjective provenance, but it does not necessarily follow from this that only valuers are valuable or that the feeling of valuing subjects are valuable. According to Hume, the individual values self feelings or interests, but for his own sake the individual equally values other things too, or in some cases he may value other things even more highly than self interests. To value other things more than self interest, he characterizes as unselfish or *altruistic* feelings. These feelings does not contain instrumental characteristic, but adheres to the intrinsic characteristic. The reason for attributing value to altruistic feelings is that the subjective feelings value the other object for its own quality. What then would be a more proper object of moral feelings to ascribe value to other than self interest? In response to this question, Hume precisely notes that the inborn moral sentiments are common to all humans, something which allows at once the community's interests as such as its natural object to value intrinsically, since human beings are by born inherited of a society.¹²⁶ Thus the subjective moral sentiment gives intrinsic value to the interests of the society, something which is being regarded as entirely indifferent to self interest. In this direction, Hume finds that altruism is also as fundamental and autochthonous or primitive in human nature as is egoism. In other words, this assumption finally brings essential and sufficient justifiable ground for Hume to consider that ethical subjectivism lies at the foundation of morality in terms of both moral judgement and value. In addition to this, ethical subjectivism also values the interests of the society, or altruism. Holding this universal sense of moral quality, he then regards ethical subjectivism as something functionally equivalent to the objective sense of morality. Hume, therefore, firmly establishes the view that subjective feelings can alone be the foundation of morality.

- Darwin's evolutionary-ecological account of the moral sentiment in view with the Humean sense:

Given the universal appeal of the sentiment based ethics, the most relevant and pressing issue follows from the main context of our discussion: How can the said ethic be extended to the evolutionary-ecological account of the biotic community? Or, how can this ethic be compatible with the functional account of the said object in relation to the given region? Charles Darwin, as a naturalist and natural historian, pays exclusive attention to this matter, as a part of attaining systematic knowledge regarding the natural environment. On this account, he regards the natural environment as a vital source of finding morality. He illustrates the assumption in his famous work called "The Origin of Species" and "The Descent of Man," published respectively in 1859 and 1871. The books reveal information about a new way of

¹²⁶ Callicott, Summer 1982, vol.4, no.2, p.170-173.

looking at the natural world.¹²⁷ The implication of this knowledge becomes significant in apprehending philosophical thought about ethics in a new dimension. In fact Aldo Leopold conveys informally the essence of this assumption in the ethical section of *The Land Ethic*. Hence, Callicott advocates that the philosophical or moral background of the said section of Leopold's *Land Ethic* is traceable in the Darwinian ethical account of the natural environment. In laying out the cornerstone of the discussion, Leopold appears with his own reflection in an estimation of Darwin's new information on the natural world with its new moral implication:

It is a century now since Darwin gave us the first glimpse of the Origin of Species. We know now what was unknown to all the previous caravan of generations: that man are only fellow voyages with other creatures in the odyssey of evolution. This new knowledge should have given us by this time, a sense of kinship with other creatures : a sense of wonder over the magnitude and duration of the biotic enterprise.¹²⁸

In the above paragraph, Leopold draws out some basic information regarding the moral world emerging from Darwin's revelation of the socio-biological or socio-ecological account of the entire biotic community. This indicates that Darwin considers the knowledge in view with the evolutionary–ecological account of ethics, or the natural history of ethics. This portrait of ethical contents, Leopold primarily refers to as the *ethical sequences* or evolutionary development of ethics. Hence, he conveys the Darwinian ethical notion in the ethical section of *The Land Ethic*. In studying the socio-ecological account of the evolutionary ethic, Darwin notices that the psychological characteristics or feeling based ethics maintain a vital role in ensuring the survivability or functional sustainability of the entire biotic community. Hence, Darwin insists that the psychological profile serves a moral force, or that the feeling based ethics is a fundamental driving force in the biotic community. In the following discussion I shall examine closely his explanation of the given ethic, which is in view with the Humean account in relation to the functional space of the community.

- Darwin's biological account of the moral sentiment:

Once Darwin takes into consideration the psychological characteristics as a vital element for the biotic community, some tough issues appears before him. What is the mechanism of this psychological element in the moral sense? And, how does this element fundamentally operate in the said community? Or, what actually does this amount to in the said community? In

¹²⁷ Burrow (ed.), Penguin Classics, 1987, p. 11-17 and Callicott in Regan (ed.), 1986, p. 387-388.

¹²⁸ Callicott in Regan (ed.), 1986, p. 389. It seems that Leopold in the quoted remark sees human relationship with natural world in a radical sense by saying: "that man are only fellow voyages with other creatures in the odyssey of evolution". I am not defending such radical relationship in discussion of the non-anthropocentrism.

finding sensible answers to these questions, he closely studies the constitutional and existential nature of the various biological species in the ecological community. In this direction, he primarily focuses on the *struggle for existence* or *natural selection* in the organisms. In this study, I shall find that the moral feelings play a prime role in favouring the struggle for survival states or functioning state of the said organisms. Without this human and all other animal behaviour would become ever more competitive, hostile, rapacious, and violent instead of ever more cooperative, deferential, genteel, and caring.¹²⁹ In the study he exclusively considers the history of the natural world. He then substantially illustrates this with an ethical consideration in the book, “The Descent of Man”. The relevant aspects of this study will be explained in the following.

As being presented in the discussion of the above paragraph, Darwin’s studies begin with the observable nature of many species, particularly mammals, in the biological world. The nature of prolonged parental care of these animals comes under his close scrutiny. Here he emphasizes on the distinct feature that the parental care in an essential manner ensures the reproductive success of these animals, or the continuous survivability of future generations. On the basis of this notion, as well as by taking our own experience into consideration, he precisely sorts out that the key essence which lies in such care is induced and facilitated by a certain strong emotion or feeling. The emotion adult mammals (in some species perhaps only the females) experience toward their offspring is parental love (or perhaps, motherly love). Darwin notices here that this feeling of the adult mammals is oriented towards their offspring, something other than concerning the self. The said parental–filial affection is then to be regarded as altruistic feelings rather than otherwise. He accordingly insists that the capacity for such altruistic feeling is naturally selected or genetically fixed as part of a species’ psychological profile, since the event strongly contributes to the continuous survivability of the organisms. Hence, Darwin finds that the said mechanism in the naturally selected feelings indispensably evolves into a moral sense of feelings, or conscience, in an evolutionary account of the biological organism. In a phrase at beginning of “The Land Ethic”, Leopold alludes this sort of moral essence from the evolutionary biological point of view by saying that an ethic is: “...a limitation on freedom of action in the struggle for existence (202)”.¹³⁰ In other words, the phrase “struggle for existence” conceptually conforms to the Darwinian view of moral feelings which is highlighted through natural selection for estimating the continuous survivability of the biological organisms. In this way, Leopold conveys a Darwinian

¹²⁹ I borrow the notion from Callicott’s account. See, Callicott in Rescher (ed.), October 1984, vol.21, no.4, p.304.

¹³⁰ Callicott considers the phrase according to the bio-psychological conceptual context in the following literature. Callicott in Zimmerman (Gen.ed.),1993, p.112.

biological account of evolutionary ethic as a conceptual context in the said location of *The Land Ethic*.

As Darwin reveals the fact that altruistic feelings is generally attached with the animal kingdom, he then regards it as useful to take their view-point as a basic starting point in the consideration of the evolutionary ecological ethic. As a part of the design, Darwin's account precisely begins with the "Parental and filial affection" among the primate ancestors of Homo-sapiens. He figures out in this regard, that the bonds of affection and sympathy, or the altruistic feelings between parents and offspring permits the formation of small-families, clans or social groups, perhaps originally consisting only of parents and offspring. Accordingly, these families, and similar affections in terms of "social sentiments" or "social instincts" such as "the all important emotion of sympathy", Darwin reasons, "will have been increased through natural selection; for those communities which included the greatest number of the most sympathetic members would flourish best, and rear the greatest number of offspring".¹³¹ In the formation of the social groups, he notices the fact that this social instinct is not enjoined to every individual, as a member will be antipathetic towards strangers to a social group. As he accordingly points out: "A savage will risk his life to save that of a member of the same community, but will be wholly indifferent about a stranger".¹³² The said sympathy is thus limited or extended only to members of their own groups.

In examining the survival (or reproductive) advantages of newly extended families or social groups, Darwin perceives the fact that as a family group would compete with other groups, ironically, the said instincts or the same principle that at first would seem to lead so directly and inevitably toward greater and greater mutual aggression and rapacity, lead instead to increase in affection, kindness and sympathy towards them. The event, in a way, evolves as modes of cooperation between the different groups. Accordingly, the social sentiments have led to the struggle for limited resources in the understanding of pursuing it collectively. This way of obtaining the resource reflects significantly that moral essence lies in social sentiments. Thus the social sentiments dispose to a moral sense of feeling in considering the survival advantages of the said groups. The groups that include "the greatest number of the most sympathetic members" are supposed to have out-competed others whose members have been regarded as quarrelsome and disagreeable. "No tribe", Darwin remarks here, "could hold together if murder, robbery, treachery, etc., were common; consequently, such crimes within the limits of the same tribe 'are branded with everlasting infamy'; but excite no such sentiment beyond these limits".¹³³ Darwin explicitly points out here that the moral attitudes of tribe people is intensely stressing on

¹³¹ Callicott in Regan (ed.), 1986, p.405.

¹³² Callicott in Zimmerman (ed.), 1993, p. 115.

¹³³ Ibid.

codes of social sentiment (for example; loyalty, defence, obedience to elders, differences and so on) which contributes significantly to the survival advantages of the small groups within the tribe. In other words, the moral feelings emerge to the point that individuals would articulate or correspond to the codes of conduct conforming to their social sentiments sufficient for social structure of a group or society to be maintained. Accordingly, the codes of the social sentiments are codified into contents of moral feeling. Thus the said moral feelings are aboriginally derived from the social instincts; both are mainly related to the society. Therefore, social instincts or moral feelings operate essentially with respect to the survival prospects of the given society, and is not being counted for the sake of the individual member.

According to Callicott, not only do the moral feelings, or competition for survival advantages, select more intense sympathy and affection within the limits or boundaries of small groups, but the following social sentiments even extend further.¹³⁴ The perception accelerates this extension, in the sense that larger social groups would advance the survival advantages, or “the greatest number of the most sympathetic members would flourish better”. Hence, there arises a tendency for diffusing the more familial affections throughout the wider population or society. Such affection effectively facilitates social integration with individuals who are less closely related, or even unknown to each-other. Darwin, accordingly, perceives the fact that the moral feelings are the key in expanding such sentiments further. This is how the social sentiments expand out of the boundary of a small group to the wider population. He, then, comes up to establish firmly the view that the origin of ethics is far more rooted in the feeling based considerations than any other matter that can be accounted for.

When expansion of the small groups is eventually merged into tribal societies, there occurs a corresponding growth of morality within the perceived boundary of a community. Ethics and society then expands correlatively. In other words, the moral sentiments coextensively evolve with the boundary of a society. The society itself, in this sense, cannot be viewed as existing in absences of the moral feelings. In the survival advantages of this wider moral community, the corresponding social sentiments become complex and so are required to the extent that one is to behave morally towards members of one’s tribe as well as member of one’s family or clan. Thus the evolution of the moral sentiments corresponds correlatively to the survival advantages of a society.¹³⁵ As proto humans or tribes and eventually human societies grow larger and so are more complex than the tribal one, the correlative moral sentiments grow more widely and are more delicately provisioned for the survival advantages of such society. In a way the moral sentiments or behaviour becomes more generally directed and refined to the requirements of the survival advantages of the complex society. Darwin, accordingly,

¹³⁴ See, Callicott in Regan (ed.), 1986, p.405.

¹³⁵ Ibid. p. 406.

finds that the moral sentiments are essentially and pervasively associated with survival advantages of the human mammals, or the biological organism, in the ecological community. Darwin is essentially convinced by finding that the moral feelings or natural selection is the main factor in the evolutionary account of the biological organisms in the ecological community. The assumption, therefore, permits him to assert that the feeling based considerations are to be regarded as a basic normative standard for evaluating the socio-biological perspective of the evolutionary ecological ethics.

Darwin realizes that the psychological characteristics are fundamental, and a general factor which brings the vast and overwhelming variety of biological organisms into moral space. Enlightened by this reading, he comes up forward to identify and so make the ground for arguing that human beings simply represent an equal member of the socio-biological world. Accordingly, the inherent psychological characteristics basically serve the mechanism of natural selection which ultimately amounts to the continuous survival advantages of the biological organism or community. In a way, the psychological characteristics govern the fundamental condition for the survival prospects of the animal organisms throughout the generations from one to the next. In other words, human and non-human living organisms are fundamentally a product of the same bio-psychological process of the organic evolution. According to this account, no significant gap lies between human and non-human living entities. Mankind, like the other beings, is thus a plain member of the wide and diverse socio-biological community. Therefore, the psychological capacity is to be regarded a basic element which directly brings human and non-human living organism into equal moral consideration. Judging by this fundamental notion, Darwin insists that human being then, is to be identified as a non-privileged member in the socio-biological account of the evolutionary ecological ethic. This is how the said psychological characteristics essentially and effectively characterize the biological universe in the non-anthropocentric version of the evolutionary ecological ethics. The said characteristics, accordingly, underlines the relationships between human and non-human living organisms in equal sense, and so construe the identity of a member of the biological community in the given account, as they simply are a product of the same kind of genotypic fixity, or a product of the same type of bio-psychological ancestral social primates. In this characterization, human and non-human organic species are neither psychologically nor physically isolated from each other, because of this relationship.¹³⁶ All living species are then viewed as kin to each other and fellow members of the bio-psychological community. In the socio-biological natural history of ethic, Darwin thus finds that the psychological profile is the key element in accounting for the non-anthropocentric version of the evolutionary-biological ethics. The psychological characteristics, therefore, is

¹³⁶ Ibid., p.388-390

to be characterized as an intrinsically valuable element in which the non-anthropocentric feature of the said ethics is flowed.

- Darwin's bio-moral sentimentalism and the Humean sense of morality:

Given the Darwinian view following from the feeling based non-anthropocentric version of the socio-biological and the evolutionary ethical phenomena, does this assumption equally correspond to the value accounts of Hume's morality? In finding answer to the question, I shall show that Darwin's given form of the moral sentiment conceptually and essentially lies in the value conception of Hume's morality. In exposing the given version of the Humean moral legitimacy, Callicott set out the notion schematically in the following sense:

1. We (i.e., all psychologically normal people) are endowed with certain moral sentiments (feeling, sympathy and so on) for our fellows, especially for our kin;
2. Modern biology treats *Homo sapiens* (a) like all other living species, a product of the process of organic evolution; and hence, (b) people are literally kin (because of common ancestry) to all other contemporary forms of life.
3. Therefore, if so enlightened, we should feel and thus value other living things in ways similar to the way we feel toward our human kin.¹³⁷

In the given argument, Hume precisely points out that the moral sentiments are fundamentally psychological facts, shared by all forms of life in the biological account of the evolutionary ethics. Accordingly, they are fellow members following from the same organic evolution, and so mankind is a non-privileged member of the biological community. He, then, insists firmly that the human and nonhuman living organisms are to be valued in equal moral consideration. Hume thus considers the biological world in the non-anthropocentric sense of the evolutionary ethic. Accordingly, Hume's feeling based ethical considerations essentially contain the non-anthropocentric feature of the socio-biological and evolutionary ethics in its conceptual framework. Darwin simply uncovers the same fact in the analysis of the socio-biological account of the evolutionary ecological ethics. Therefore, in the said account Darwin's non-anthropocentric version of the moral sentimentalism basically lies in the value perception of Hume's morality.

¹³⁷ I have primarily considered this argument in the light of Hume's theory of value. I borrow its framework from the viewpoint of Callicott, but according to the context of Hume's value theory. Callicott discusses this in: Callicott in *Environmental Ethics*, summer 1982, vol. 4, no, 2, p. 172.

- Darwin's eco-centric feeling based ethical phenomena:

We have seen in the preceding discussion, that the Humean-Darwinian feeling based moral values allows directly the living organisms as well as their non-anthropocentric identity in the framework. However, the consideration of “soil and water,” or inorganic elements, as part of the ecological community, is yet to be regarded into the moral composition. Ecology, as we already know, is viewed as the representation of a functional society composed of living and non-living organs. The functional characteristic, which follows from the relationships between the organisms, fundamentally constitutes the living social whole, known as biotic community.¹³⁸ Hence, Darwin, according to Callicott, insists that this living feature provides further scope to allow the whole ecological community into a wider consideration of the said morality.¹³⁹

This psychological profile is then to be specified as the most basic and essentially most relevant factor for sufficiently holding the functional sustainability in terms of the complexity, diversity and integrity of the said object. Emphasis is put upon the said factor being regarded as a distinguished and cardinal characteristic of measuring precisely the functional status of the biotic community. In this direction, the characteristic essentially and sufficiently insures the healthy functioning of the whole community. This significantly implies that the psychological characteristics is to be characterized as the ultimate criterion for defining the good and the bad, or the right and the wrong, in terms of the functional state of the said community. Thus, in view of the given fact, Darwin explicitly finds that the said characteristic or feelings, as it were, is itself endowed with inherent worth. Otherwise, the whole community is simply not able to sustain its normal functioning. He therefore considers this essential and sufficient ground for ascribing inherent value to the said feelings. The qualification then brings the entire biotic community into moral status value. However, extinct or dead species are not accountable in the value status of the functioning community, as they can no longer contribute to the object. This is how the Darwinian feeling based ethical accounts develops separately from the consideration of biological organisms, in order to follow up collectively the biotic community, in the non-anthropocentric disposition of the evolutionary ecological ethic. He, therefore, establishes solidly the view that the said ethics is directly associated with the functioning of the biotic community.

As following from the above discussion, Darwin provides an extensive and complete portrayal of the feeling based non-anthropocentric account of the evolutionary ecological

¹³⁸ I consider once again the relevant aspects of the ecological discussion of Leopold's *Land Ethic* in the consideration of finding the moral content of the discussion.

¹³⁹ See, Callicott in Zimmerman (Gen. ed.), 1993, p.122.

ethics, or the biotic ethic. In other words, he finally has found that the natural environment is indeed the vital source for accounting morality, as its inherent psychological profile essentially gives him the detailed knowledge required for estimating the most fundamental issue regarding the survival states of humans as well as non-human beings, collectively the whole biotic community. Leopold is exactly concerned with this sort of ethical conception, and so conveys this ethical message in the evolutionary development of ethics or “in the odyssey of evolution” of the said biotic enterprise. Thus, he explicitly invokes Darwin’s non-anthropocentric version of the feeling based ethical considerations in defining the moral aspect of the said location of *The Land Ethic*. Leopold, accordingly, reckons the ethical consideration of the object in the following phrase: “...an ethic, ecologically, is a limitation on freedom of action in the struggle for existence”.¹⁴⁰ It, now, appears clearly from the phrase that he exactly follows Darwin’s evolutionary ecological account of the moral feelings in estimation of the survival states or the functioning of the whole biotic community. The moral strength or the survivability of the functioning biotic community accordingly evolves from the explanation of the feeling based ethical values of Darwin, from which the ethical framework of Leopold’s *Land Ethic* is directly built on. Through Darwin he essentially invokes the Humean value account which inescapably provides the moral considerability for the entire functional biotic community. This assumption we shall consider in the following step.

- Darwin’s eco-centric moral sentimentalism reflects the Humean account:

Given the Darwinian or Leopold’s non-anthropocentric account of the moral sentiments, characterizing the moral status value of the whole biotic community in consideration of the evolutionary ecological ethic, how can the assumption be evaluated in the value conception of Hume’s morality? I shall, in response to this issue, find that the ethical background of Leopold’s land ethic basically is founded in the value accounts of Hume’s morality. I shall justify the argument from the viewpoint of Callicott¹⁴¹. He discusses this in the following sense. Accordingly, Hume observes the non-anthropocentric moral considerability of the given community, in the sense that we have not only sympathy for our fellow living organisms, but we are also naturally endowed with this sentiment. The sentiment which is actuated essentially values other important things too. Accordingly, the proper object of such sentiment is society itself. In this direction, Hume now takes the facts of the ecological science into account. This informs him about the existence of a proper object of value, being one of the most fundamental moral passions. The biotic community is an appropriate object of

¹⁴⁰ . Callicott in Regan (ed.), 1986, p. 404.

¹⁴¹ . Callicott discusses with Hume’s feeling based ethical account in consideration with evolutionary ecological community in the following text. See: Callicott in Rescher, (ed.), October 1984, vol. 21, no.4, p. 305.

that passion, which is composed of the function of the complexity, diversity, integrity and stability of the social whole (together with its fellow members or component parts) to which human beings belong. In other words, he actually perceives the fact that we humans are part of the natural environment and so have certain feelings towards the social whole of the biotic community. Thus, Hume's moral psychology itself accommodates the view of evolutionary ecology in its conceptual framework. He, accordingly, asserts that moral feelings have endowed human beings with effective natural or inherited intentional feelings towards bonds of kinship, community membership, community of human beings and nonliving objects. Whatever might be the object of those moral feelings. The biotic community, then, owns itself as an object of such feeling. Therefore, moral feelings simply have the whole biotic community as the most familiar or fundamental natural object of attributing the value to. Accordingly, Hume's moral sentiments itself value the ecological information or bring the whole ecosystem into object of moral consideration. Ecology, thus, contributes to making him value intrinsically the whole ecosystem, just as he separately values evolutionary biology as a component of the given object.

As it is found that Hume's feeling based ethical account is directly consistent with the moral consideration of the holistic biotic community, the crucial question arises: Is this assumption to be rated as the non-anthropocentric criterion of the evolutionary ecological ethic? One can, for instance, claim that his ethically accountable value consideration, or moral sentimentalism, is not sufficiently concordant with the given sense of the holistic ecological ethic, as the value attribution to the said object is largely following from the sentiments of human beings or human valuers. As we have already seen in the preceding discussion of the chapter, this view is granted by Hume in the following sense; "you never can find it, till you turn your reflection into your own breast . . ."¹⁴² Hence, the ambiguity arises out of human's account of the non-anthropocentric moral sentimentalism in relation to the given eco-systemic ethic. In respond to the problem, I shall show that the conceptual framework of Hume's moral sentimentalism is itself firmly decorated with the non-anthropocentric and evolutionary ecological account of the biotic ethic. On this account, I suppose it is necessary to point out a crucial distinction which lies in the estimation of Hume's view on human's feeling based moral values. This accordingly indicates that the value may be grounded in human feelings, however, neither the feelings nor necessarily the breast or self in which they reside, are their natural objects. Thus, his moral feelings are conceptually decorated in such a way that the assumption can itself absorb the given objects as such as subject of the value accounts. Therefore, Hume's feeling based classical axiological theory in view with the biological and ecological thought, is genuinely and straightforwardly non-anthropocentric, since it

¹⁴² I have considered this notion of Hume's non-anthropocentric and evolutionary ecological account of the moral sentimentalism from the following article: Callicott in Rescher, 1984, October, vol. 21, no. 4, P. 305-306.

conceptually provides essential space for the intrinsic value of the given natural entities in its framework. Darwin simply reveals such moral psychological facts through the study of the survival prospects of the biological organisms, as well as collectively the whole ecosystem, in the perspective of the evolutionary ecological ethic. Darwin, in another sense, actually echoes the Humean feeling based ethics in reflection of the evolutionary ecological ethic. On the other hand, Leopold clearly conveys the Darwinian moral sentiment in drawing the conceptual foundation of the environmental ethic, or land ethic. By doing this, Leopold, through Darwin, conceptually grasps the value accounts of Hume's morality. I am, therefore, not wrong to argue that the conceptual foundation of Leopold's environmental ethic is fundamentally based on Hume's moral psychology.

- Moral sentiment values the functional ecosystem as the whole:

It nevertheless might appear from the preceding discussion that the Humean-Darwinian non-anthropocentric and non-individualistic version of the feeling based ethical considerations, or Leopold's land ethic, values only the biotic community and ignores the moral status value of the individual fellow members, or the components of the said object. The background of such perception follows from the fact that the feeling based ethical values basically evolves from the functioning social whole of the ecosystem itself. In other words, the moral force of the given feelings is naturally selected for the holistic paradigm, and is not focusing equally on the individual members of the community. Despite this fact, they have a considerable role in maintaining the stable functioning of the whole community. Hence, the concern arises from the fact that the moral appeal of such value account pertains only to the holistic community as subject of moral consideration, and not for the individual members. In spite of this, I shall show that such concern is simply baseless according to the given value accounts of the biotic community. We have explicitly seen in the Humean-Darwinian feeling based ethical axiological accounts that individual members, both human and non-humans of the biotic community as well as collectively the whole biotic community per se, are the objects of the moral sentimentalism. This precisely maps out that moral sentiments equally value the individual members as well as collectively the whole community itself. No one's dignity is denied or worsened in such moral consideration. Every individual member is equally valued in the complete notion of the functional ecosystem. Based on this account, the ethical consideration of individual members, however, is pre-empted by concern only for the healthy functioning, in terms of the integrity, stability, and beauty, of the biotic community. The ethical foundations of the land ethic itself, accordingly, provide basis for including both fellow members of the biotic community and the entire biotic community itself in the space of moral consideration. Thus, the value accounts of the moral sentiment provide not only moral considerability for the whole ecosystem per se, but it regards the holistic value in the fullest

sense, where every one is equally accounted for. This precisely implies that the normative force of the psychological profile ascribes the moral status value to the functional holistic biotic community in itself, while the assumption must be viewed on the basis of the Humean-Darwinian ethical perception. Therefore, such concern has no place in the given moral status value of the biotic community.

In the way, the holistic value of the community, or the biotic ethic, provides the functional state as the determining factor for estimating the rightness or wrongness of the said object. According to this normative scale, in the decision of constructing the dam, the said moral status value has simply been ignored in relation to the functional state of the whole biotic community in the region. This is why the dam is not acceptable from the given value status of the non-anthropocentric version of environmental ethic. In a way, the value further provides a moral ground for the protection or preservation of the said biotic community, in such an environmental situation. We have thus found, in accordance with the discussion of Callicott's, that the feeling based ethical aspects of *The Land Ethic* values only the entire functioning ecosystem and so appeals for the moral protection of it, in the given situation. Therefore, we have authentic ground to say that such value account of the Leopold's *Land Ethic* is exactly consistent with finding the moral consideration of the whole functional ecosystem in the given situation.

E. A morally accountable preservation policy for the entire ecosystem and non-anthropocentrism:

We have seen in the previous section, Callicott shows that the inherent psychological characteristics provide a general criterion for attributing moral status value to the overall functioning of the ecosystem, or the ecological community. In a way, the community is itself entitled to moral consideration, and so for allowing its own good or interests to be protected morally in the given sense. This affirms, in other words, that the given complex ecosystem of the region has right in continuance of survival or normal functioning.¹⁴³ The dam is accordingly blamed for jeopardizing the moral status or the right of the functioning ecosystem. Although Callicott's account of bio-sentimentalism points out that the decision of constructing the dam severely ignores the moral status of the holistic ecosystem, he did not precisely explain what practical implication would generally follow from attributing such status value to the community. Having not addressed this crucial issue, the assumption accordingly poses a number of relevant questions regarding his value based holistic account

¹⁴³ It is useful to mention here that moral weight of the following terms such as right, good, interest, wellbeing and the like, is derived from the moral status value of the entire ecosystem. This therefore implies that each of them maintains equal sense of moral strength in relation to the said situation. I shall accordingly consider each of them in conformity with the context of the following discussion.

of the land, or environmental ethic. How can these moral sentiments be applied? What should be done when it is revealed that the survival of some species, as well as the survival of an endangered species, are so threatened that it inflicts severely on the total functioning of the ecosystem? In other words, what should be morally done for protecting the said value or interests of the community in such a situation? Which reason should be given for drawing such moral action, or policy? How should then the value of the whole community be associated with composing such policy? And, which way then should the policy be explained in the realization of protecting the moral status of the community in the discussion of non-anthropocentric environmental ethic? The given matters then produce the view that we should not be limited to barely allowing moral status value, but we equally must find a morally obligatory argument in favour of a policy which generally protects the value of the ecosystem in such situation. This accordingly highlights the fact that a complete ethical system is not only concerned with valuing an object, but equally stresses a vital issue: What practically ought to be done in the relevant situation? Lacking this normative guideline, we therefore find that Callicott's account of non-anthropocentrism remains an incomplete approach in the normative discussion of environmental ethic.

Callicott is aware of the fact that this conclusion might follow by concentrating only on the moral value status of the ecosystem, and not accommodating it within a complete ethical framework. The assumption, however, inspires him to make some efforts so that one can at least find a way of protecting the said value in the realization of a complete ethical system.¹⁴⁴ In this effort he focuses on whether the value can be part of a self consistent and complete theoretical basis of conventional moral philosophical terms, in the sense of a deontological or consequential view. He accordingly figures out some useful indications whereof one can find the way to set the holistic value status of the functioning ecosystem in consistence with the given terms. This is how we notice that Callicott's interpretation of Leopold's functional holistic land ethic indeed remains a matter of open discussion in view of the given normative philosophical senses. My attempts therefore will be here to find out a plausible moral theory which essentially and sufficiently protects the said value, or the functional characteristic of the ecosystem, in its framework. The attempt will eventually lead to an ethically accountable alternative decision model, following the answers to the questions pertaining to the situation which I have raised in the above paragraph. For this purpose, I shall focus on an assumption embodied in the consequentialist tradition in view of properly dealing with the given matters of the ecosystem. In this direction I shall find that the arguments of Bryan G. Norton are persuasive and consistent with the given matters in a consequentialist account. He discusses them substantially in his book, called "Why Preserve Natural Variety?" published in 1987.

¹⁴⁴ Callicott in Zimmerman (Gen.ed.), 1993, p.130-132.

Recently he has also published several essays in this respect. I shall, however, consider chapter eight and nine of the book, as they are significantly relevant to the objective. Still, when required I shall also look into other areas of the book and the other sources as well. In the given chapters Norton closely examines the said issues in relation to protecting the value of the ecosystem in view with non-anthropocentrism, as well as portraying his own account in this regard. He precisely stresses here that we must find a moral argument which essentially protects not only the value, but also takes sufficiently into account the welfare of the said community in searching for practical consistency with regard to an environmental situation. I shall find here that the holistic account of Aristotle's teleological ethic, or a wider approach of consequentialist ethic, corresponds exactly to finding the mentioned requirement according to the view of non-anthropocentrism. The assumption will be referred to as an alternative general preservation policy in respect to such environmental situation. I assume that the consideration of the Aristotelian teleological ethic as a consequentialist argument will significantly serve my objective in view with the given matters of the discussion. In order to attain the object as well as getting clear knowledge of those matters, it is worthwhile to be acquainted with the basic essences of Norton's discussion on general preservation policy regarding the ecosystem.

- An evaluation of the moral status value of the ecosystem:

Let me first focus briefly on the moral status value of the non-individualistic and non-anthropocentric version of the said ecosystem in accordance with the current context of the discussion. The assumption might pave the way for finding sensible answers to the issues we have mentioned earlier. Accordingly, this suggests how Norton actually evaluates the said value in relation to a general preservation policy. He insists that the moral status value of the functional ecosystem must satisfy the two following basic requirements in order to be part of the given policy:¹⁴⁵

1. The moral status value of the object or the ecosystem must be capable of explanation and justification under a moral theory.
2. The proposed value must have adequacy and justifiable consistency with the characteristic of the object. This condition indicates that the value has sufficient qualification in order to be part of a general normative theory.

The proposed requirements can be followed the other way around. However, according to these requirements, Norton as a preservationist, has no fundamental disagreement in relation to consider the moral status value of the functional holistic ecosystem, but he nevertheless regards that the matter need to be set in a careful evaluation in order to be considered for a

¹⁴⁵ Norton, 1987, chapter 8, p. 155-156.

general preservation policy, or a complete moral rationale for such policy. As such, he concentrates on two different approaches of Callicott's view regarding the value assessment of the said object. One of them considers that the functional criterion itself qualifies moral status value to the entire ecosystem, while accusing the feeling based value criterion to be a controversial or insufficient notion. According to the main essence of this approach, the whole ecosystem and the species have moral status value, but non-human individuals do not have the equivalent status. The other, which is viewed on basis of the feeling based ethical values, is suggesting that the whole functioning ecosystem itself has moral status value, assuming non-human individuals and species' as inevitable parts of the said moral object. This perception conceptually follows the value notion of Hume and Darwin. Given the value assessment of both approaches, Norton argues that the former approach has a promising or positive account of the policy in regard to finding moral protection for the functioning value of the ecosystem and species, consistent precisely with sustainable survivability of humans or the relevant values of humans, in the given sense of the ecosystem. In opposing this claim, I shall in view of refuting the accusation firstly show that the functioning account of the policy cannot solidly protect the value of the holistic ecosystem. Thereafter I shall find that Callicott's latter, or feeling based value approach of the policy, protects equally and firmly all parties involved in the value of the whole ecosystem. I argue that the policy based on the latter approach is an appropriate one in relation to such environmental situation, or a morally accountable general environmental policy of a relevant situation. With these features of the protection policy, I shall first look at Norton's view on the feeling based ethical values, in finding justification for the accusation. Thereafter, I shall accordingly consider the other relevant issues.

- A critical assessment of the feeling based ethical values:

In finding a critical account of Callicott's sentiment based moral status of the non-individualistic and non-anthropocentric functioning ecosystem, Norton's estimation can be followed in two ways.¹⁴⁶

Firstly, he looks at Callicott's view on the Humean sentiment account of moral values in consideration with the Darwinian evolutionary-ecological explanation of the entire ecosystem. Secondly, he examines Callicott's justification of moral sentimentalism as a conception itself.¹⁴⁷

¹⁴⁶ See, Ibid., p. 172-175.

¹⁴⁷ I have previously explained both aspects in accordance with the viewpoints of Callicott. I currently repeat the relevant parts of them as being exposed from the viewpoints of Norton.

I shall follow the criticism in conformity with the given shape. Accordingly, Norton focuses on certain relevant aspects of Callicott's discussion which follows from the evolutionary account of the moral sentiment. He assumes that the discussion has not sufficient ground for promoting it to a general preservation policy. On this perception, he looks at first at the way Callicott illustrates the main lines of Hume's moral sentiment, and thereafter he considers the critical account of it following from the evolutionary explanation. Accordingly, Callicott points out that the Humean moral argument is primarily based on human's altruism, like egoism, a primitive affection which constitutes fundamentally the sentiment account of moral values. In finding an original and evolutionary ecological context of such value, Callicott figures out that Darwin's conception of natural selection fundamentally replicates such altruistic or moral feelings. According to Darwin this feeling essentially favours the continuous survival of human beings, from the primitive period of small groups, to the development of wider tribal society, and to the modern human society as well. Equally he enunciates that the same feelings have an essential role in favour of the continuous survivability or evolutionary development of non-human entities as well as the sustainable functioning of the ecosystem. According to Darwin or Callicott, these sentiments then, have a natural, evolutionary origin and so are intrinsically valuable. This moral qualification, therefore, applies to individuals as well as species, being regarded as essential parts of the intrinsically valuable whole functioning biotic community. Callicott, then, finds no reason for a precise or specific justification concerning elements of non-human individual members in connection with the value of the ecosystem, as the fact is essentially involved in the non-individualistic and non-anthropocentric total value perception of the object.

Norton claims that this attempt of Callicott's virtually leads to a shortcoming in the feelings based value approach. Norton regards that factors of the individuals needs further explanation in connection with the value assumption of the ecosystem. According to his estimation of the approach, the attempt not to allow such things of the individuals raises the question regarding how a concern for ecosystem so derived can avoid conflict with the more basic concern for individuals in a relevant situation. Not focusing on such an issue, Callicott's feeling based value approach produces less credibility in consideration of a general preservation policy. Therefore, Norton characterizes the feeling based value approach as not sufficiently equipped for the purpose of the given policy.

Besides finding the given insufficiency in the value perception of Callicott's evolutionary-ecological account of the biotic community, Norton's critical evaluation further concentrates on the concept of moral sentiment per se. For this part, he considers some main lines of Callicott's discussion following from the viewpoints of Hume and Darwin. Norton emphasizes that the conception of moral sentiment is itself not based on sufficient

justification in a relevant situation. According to his criticism, the Humean ethics or the moral sentiment contains a subjective or relativistic account. As such the ethics does not provide a basis for objective argument when disagreement arises in a relevant situation. Norton acknowledges though that Callicott provides an answer in response to the charge, but not a sufficient one. In his answer Callicott states that a “consensus of feeling” emerges on important issues which are functionally equivalent to objective moral truths. In order to justify that moral subjectivism equally represents the objective or universal truth, he brings as an example two incidents to which people has consensus of feeling. Accordingly, there is a standardized “psychological profile” or consensus of feeling on matters such as ‘murder’ and ‘theft’ which transcends the cultural differences of people. The two events are generally accepted by most people in all cultures as ‘freakish’ and so beyond moral acceptability. No different sentiments characterize the matters. Callicott thus justifies that such psychological profile following from common subjective feelings is equivalent to the universal account of moral truth. Subsequently, Darwin reveals that such psychological characteristics are naturally selected in terms of social codes of conduct or altruistic behaviour which essentially favours the continuous survival of human beings in a social perspective. In response to this justification, Norton is not denying that human sentiments have a role in terms of how we come to have and share the sentiments we do. He nevertheless points out that they go only this far. They do not explain the role of human’s cognitive condition in the given occasions. Because of the deficiency in this explanation, Norton considers that Callicott provides an justification for attributing feeling based ethical values to the functioning ecosystem, but the justification is nevertheless a partial one. Accordingly he is not completely convinced that the assumption have adequate moral force for constituting the preservation policy. He therefore insists that it is useful to avoid such controversial value assumption concerning the matter.

- Functioning based moral status value and Aristotle’s holistic teleological ethic:

In a purpose of finding a suitable value approach, Norton comes up with an alternative account on the assumption. Accordingly, he sorts out that the functional characteristic is an essential element and straightforwardly associated with defining the stable account of the ecosystem. In this characterization he points out that the functioning characteristic itself determines a definite standard for constituting the intrinsic value of the said object. He therefore considers that the functioning criterion confers moral status value on the ecosystem. Before turning in detail to the discussion of the functioning account of moral value for the protection policy, let me first look briefly at the relationship between the functional characteristic and the proposed value, as this criterion have an important place in the policy. Accordingly, the functional characteristic is, as we have precisely pointed out in the earlier discussion, is essentially attached to the dynamic state of the entire ecosystem of the region.

The characteristic, according to Norton, has both essential and sufficient qualification to be part of the said value. The proposed value then corresponds directly to this functional characteristic, which represents the definitive mark of that type of value. This therefore implies that the justification of such value fundamentally evolves from the functional characteristic of the ecosystem. The proposed object, then, has this relevant characteristic which qualifies it for moral status value. Thus the characteristic and the value conceptually lie in the same equation. Norton assumes that the relationship accordingly provides a wider adequacy for taking the proposed value into the space of a general preservation policy. He thus employs the functioning value in defining the preservation policy for the whole ecosystem.

Given the relationship between the functional characteristic and the value assumption of the ecosystem in a consideration of the preservation policy, Norton illustrates the former approach of Callicott's in the way that species are seen as a collection of continuous activity of individual members, and they are at all times parts of the ecosystem. The fact that the species are viewed in this manner, is suggesting that they are essential components of the entire functionally valued ecosystem. According to this feature, species occupy a logical relationship between the individuals and the ecosystem. In this form of the relationship, the value of the species derives directly from the functioning ecosystem, and not from the individual members of it. Thus Norton shows that the individuals have an instrumental role in maintaining the continuous stable or dynamic functioning of the object. Accordingly, he portrays the functional value model of the ecosystem from the viewpoint of Callicott, in a purpose of protecting the species and the said value in view of a complete ethical system. He explains it in the following way:

A society is constituted by its members, an organic body by its cells, and the ecosystem by the plants, animals, minerals, fluids, and gases which compose it. One cannot affect a system as a whole without affecting at least some of its components. An environmental ethic which takes as its *summum bonum* the integrity, stability, and beauty of the biotic community is not conferring moral standing on something else besides plants, animals, soils and waters. Rather, the former, the good of the community as a whole, serves as a standard for the assessment of the relative value and relative ordering of its constitutive parts and therefore provides a means of adjudicating the often mutually contradictory demands of the parts considered separately for equal consideration. If diversity does indeed contribute to stability (a classical "law" of ecology), then *specimens* of rare and endangered species, for example, have a *prima facie* claim to preferential consideration from the perspective of the land ethic. Animals of those species, which, like the honey bee, function in ways critically important to the economy of nature, moreover, would be

granted a greater claim to moral attention than psychologically more complex and sensitive ones, say, rabbits and moles, which seem to plentiful, globally distributed, reproductively efficient, and only routinely integrated into the natural economy.¹⁴⁸

The quoted statement in the above, following from the functional model, clearly shows that the concept, ‘the good of the community as a whole’ serves as a basic norm for ethical holism. Hence, Norton advocates Aristotle’s teleological ethic of the holistic kind as an inevitable part of this ethical system in consideration of the preservation policy. Accordingly, this holistic ethic ascribes relative or instrumental value to individuals, because they are essential in order to maintain the continue functioning of the entire ecosystem. Once it is regarded that the entire ecosystem has moral status value, this would then be a powerful reason for such ethic to protect species, deriving from their instrumental value in promoting the ultimate good for the community. According to this approach, species have no intrinsic value, but is instrumental to a source of value, i.e., the ecosystem. In the perspective of this ethic, its value system protects the value of the ecosystem, which is described as non-anthropocentric, and species have value independent of their value to humans. In other words, this holistic ethic finds that the species have a critically important role in relation to protect and promote the functioning value or wellbeing of the ecosystem, and so they are also accountable for the intrinsic value status. Species then have moral status, or they have their own value independent of human’s instrumental values, but nonhuman individuals are not equated with this status. Concern for individual members is however to be treated as a relative factor in accordance with the particular relation of each species to the collective entity, i.e. the ecosystem. In this characterization, this ethic provides justification for dealing with matters or interests of the individuals who are members of endangered species. This is how Norton portrays the functioning based value account of this holistic ethic in the sense that its basic norm not only protects and promotes the value of the ecosystem in the non-anthropocentric and non-individualistic sense, but also the value of the species in the account.

In so far as it is understood in this sense, the functioning based value of this holistic ethic makes up a policy in which moral protection is primarily concerned with the ecosystem and its species, but not with the individuals. In this direction of formulating a policy, the assumption also provides room looking for a human relation to the morally considerable holistic ecosystem. It considers that the sustainable human settlement essentially depends on the moral protection of the functionally valuable holistic ecosystem. Accordingly, this ethic is essentially concerned with and so protects this value. In an account for the sustainable human settlement, the considered policy then allows the fact that the human being is morally permitted to use a natural entity or ecosystem as long as it does not reduce or jeopardize the

¹⁴⁸ Norton, 1987, p.176.

functioning value of the object. This holistic ethic, accordingly, maps out the policy in the sense that the moral accountability of such human act essentially lies in concurrence with the functioning value status of the whole ecosystem.¹⁴⁹ In other words, this holistic ethic formulates a protection policy in which the sustainable continuity of human species should be placed in proportion to the functioning moral status of the holistic ecosystem. Given human's such relation to the ecosystem, Norton eventually figures out that the functioning based value of this holistic ethic not only protects the value of the ecosystem and its species in the framework of the policy, but it equally permits human beings to use the natural environment without destroying or harming its moral status. He therefore considers that the policy has a significantly promising rationale in the sense that its norm morally protects and promotes the functioning status of the holistic ecosystem, nonhuman species as well as the sustainable survivability of the human species in the object.

- Can the functioning value account of the holistic teleological ethic be accepted?

Although Norton's functioning based environmental protection policy in this holistic ethic provides moral protection and is promoting the functioning value of the ecosystem, species and sustainable survival of the humans as well, the assumption does not equally address the nonhuman individual members of the object. The main cause being, as it follows from the discussion, that the individuals are not being regarded as an object of moral status in the proposed value approach. Norton justifies this by claiming that such assumption will eventually not emphasize protection for the species. He specifies this in the following manner. “. . . species preservationists gain no advantage, indeed, damage their cause in some respects, by establishing that non-human individuals have intrinsic value”.¹⁵⁰ The problem with such justification, I shall find, is that this perception is not only less persuasive or more controversial regarding his charge against the feeling based value status, there will follow further arguments as well. Accordingly, his functioning based holistic ethical preservation policy does not morally protect all parties involved in the ecosystem. Moreover, I shall find that his account of using the natural environment does not even correspond to non-anthropocentrism, but corresponds to weak anthropocentrism. In order to reach these objectives, I shall follow the discussion in conformity with the given menu. Accordingly, one of his main accusations against the feeling based value approach is that the assumption does not provide specific or sufficient space for discussing essential matters of the individual organisms in connection to the ecosystem. In finding a solution, he emphasizes that the functioning based value approach provides a

¹⁴⁹ In finding more information regarding human usage of the natural entity or ecosystem in moral content, see, Norton, Summer 1992, vol. 1, no. 2. p. 97-111.

¹⁵⁰ Norton, 1987, P. 168.

persuasive account in response to this problem. In the account he figures out that the concerning matters of individuals is to be treated as a relative fact of the morally valued species. Accordingly, he considers that the concerning problem of individuals would find a justifiable solution to the matter, rather than putting them into equal moral status to the species. Given this justification, we nevertheless perceive the fact that this underplays the justification by keeping them out of the moral space. Even though one of his main intentions is to treat the concerning states of the individuals in a precise and considerable sense, in response to a critical assessment of the feeling based value approach. This implicates that the attempt has no moral force from which the justification could find a moral or firm basis for solving the concerning matters of the individuals. Contrary to this, his justification for the individuals is not viewed in equal moral consideration. Accordingly, the assumption has contributed to a controversy over his emphasis on finding a justifiable solution to the problems or interests of the individuals. In this direction, his rationale for individuals eventually produces similar result in the constitution of the policy, as it is suggesting that it morally protects the value of the species, but not the individuals. The most relevant and fundamental question then arises: How can the functioning based moral value genuinely concern and protect the individual organisms as long as they are being denied moral consideration in the conception? Given this scepticism, I therefore find that Norton's charge against the given sense of the feeling based ethical values has no credible ground.¹⁵¹ More importantly, this produces the view that his interpretation of the functioning based value approach in the given holistic ethic does not necessarily protect all parties involved in the ecosystem.

In addition to the above justification, in the said preservation policy Norton see the human relationship to the ecosystem in the context of human values. He favours human's sustainable or moral way of using the natural environment as consistent with the holistic functioning value. In other words, a dam, according to this policy, can be morally acceptable as long as it does not reduce the functioning value of the holistic ecosystem. In this characterization, the assumption has at least two relevant manifestations of the policy. One of them is suggesting that the functioning based preservation policy is not precisely able to provide a firm basis for protection and promoting the value of a natural entity, or the total value of the holistic ecosystem. The other is viewed in the sense that once the policy values the functioning holistic ecosystem specified in the context of humans' values, the assumption no longer is to be viewed in a non-anthropocentric sense, but at best adheres to the weak anthropocentrism¹⁵². As being judged from the given findings, I therefore have found genuine

¹⁵¹ In addition to this, Norton has another accusation against the feeling based moral values which is that it does not focus on human's faculty of reason. I shall address this issue in the appropriate context of the following discussion.

ground to justify my assumption that the policy constituted by this functioning based holistic ethic is not an appropriate approach for protecting the object in such environmental situation. With this consideration, I shall in the following look at Callicott's latter approach.

- The feeling based value of the ecosystem and Aristotle's wider version of holistic utilitarianism:

As it is precisely found in the preceding discussion, the functioning based holistic ethic is not a suitable policy for protection and so promoting the total value of the ecosystem in the situation. The assumption then permits me to take the feeling based value approach of Callicott into this holistic ethic, in a sense of finding a genuine protection policy for the given object. In this direction, I shall firstly look briefly at the relationship between the feeling based moral status value and the functional characteristic of the entire ecosystem, as it is already acknowledged that the criterion has an important role in the value evaluation of the said object in the policy. In this term, the proposed value is regarded as essentially attached to the functioning characteristic of the ecosystem. This implies that the value is being proportional to its functional characteristic and so there is an equal corresponding relationship between them. Therefore, the relationship justifies a wider adequacy for taking the proposed value into account for a general preservation policy. We shall accordingly find in the following discussion that the same holistic ethic firmly protects the total value of the functioning ecosystem itself in the said policy. In this case, this holistic ethic will not be an alternative to the former, but a modification of it.¹⁵³ Hence, I shall consider that the feeling based value approach of Callicott is essentially consistent with this holistic ethic. On this account, Norton assumes that the species must have instrumental value, but on the basis of Aristotle's holism they are also in a way intrinsically accountable. In concern with this judgement, it is useful to be acquainted with certain key and relevant aspects of Aristotle's teleological account of the holistic ethic, as this ethical system has a prime role in framing the preservation policy. Aristotle exclusively believes that every object has a good of its own. He accordingly insists that the *teleos* or the final purpose of every action is directly aimed at attaining the total good of the object, in the highest form.¹⁵⁴ This is why his ethical system is generally known as teleological ethics of the holistic kind, or simply Aristotle's holism. In other words, Aristotle's holistic ethic judges the good or the bad of an object on the basis of

¹⁵² I am not concerned with further discussion on the weak anthropocentric account of the preservation policy, as it is not main objective of this part of the discussion.

¹⁵³ One can apply this holistic ethic in finding a suitable account consistent with the assumption of an object. For more information regarding this perception, see: Ibid, p. 9-11.

¹⁵⁴ The Greek word 'telos' is translated as 'purpose', or 'goal', or 'end'. See, Des Jardins, 1993, p. 26- 27 and p. 154-155.

its total aspect, not from an individualistic perspective¹⁵⁵. Therefore, the main purpose or moral norm of the action is to be defined as attaining the total good of the object in the optimal sense pertaining to a relevant situation. We shall find in the following discussion that this perception conceptually does not differ significantly from main the argument of the consequentialist ethics.

In consequentialist ethics, the perception of obtaining the value or the good of an object in its highest form is the determining factor in defining the moral aspect of the action. This basic conception, therefore, appears the same in both ethical theories, in so far as they are concerned with attaining the value of the object in a moral term. On account of such generic view, Aristotle's holism shares some features with utilitarianism. There is, however, certain difference in reference to measure the value of the object in both senses of utilitarianism. Accordingly, Singer, as we have already pointed out in the beginning of this chapter, uses the sentient account of utilitarianism for measuring the value. This account has only the scope to consider the interests of certain individual animals into moral protection, and does not seize the interests of all parties concerning the said situation. This is why the assumption is characterized as a limited or individualistic version of utilitarianism.¹⁵⁶ On the other hand, Aristotle's holism or utilitarianism takes a comprehensive account as it constitutes a scope for measuring the value of an object, in the sense that the interests or values of all members or elements involved with the object is to be measured totally. The notion of measuring the total value or utility in this holistic ethic overlaps any separate or comparative value assessment of different individuals in the total utility, as this move either might lead to assign negative value to an individual organism, or it might lead to an emphatic concern for particular individual's value in the ecosystem. The assumption can even end up with conflict of values between various organs of the ecosystem. In order to avoid such problematic and complicated situation, this form of holistic utilitarianism rules out such separate or comparative value assessments of different individuals in the total utility. This assumption then permits us to characterize his judgement of the value as a wider or complete sense of utilitarianism. In other words, this Aristotelian utilitarianism provides the reflection of a complete form of the traditional account of utilitarianism.¹⁵⁷ Norton assumes that such complete perception of the

¹⁵⁵ Aristotle's account of human's behaviour and the "good of the whole community". See, Ross, Oxford, 1998, p. xvi-xvii and p.11-14.

¹⁵⁶ I consider once again certain aspect of Singer's hedonistic account of classical utilitarianism for the sake of the current context of the discussion.

¹⁵⁷ My consideration of finding a comparative relationship between Aristotle's holistic teleological ethic and utilitarianism primarily follows from a discussion of Jon Wetlesen. I consider only certain aspect of the discussion pertaining to my objective. He considers the matter as a part of an environmental ethical discussion, in following place of the book: Wetlesen in Witoszek and Gulbrandsen (eds.),1993, p. 99-108.

value judgement provides a genuine and reliable norm for defining a general preservation policy in the sense of good and bad, or rightness and wrongness in relation to a holistic ecosystem. He thus considers that the said ethical argument holds a justifiable moral norm for accounting such policy. Accordingly, once we put the total version of utilitarianism in reference to our concerned case, then its moral norm considers the relationship between the individuals, the species and the holistic ecosystem, in the following sense. This norm not only protects the value of the whole ecosystem, but equally protects and so promotes as far as possible the interests of all parties involved in the morally accountable value of the ecosystem. According to this, the relationship between the given entities and the holistic ecosystem is understood as an inclusive good or internal part of the whole relationship of the ecosystem. This relationship then evolves as an internal cause and effect relation, in which the value of the entities will be instrumental, but are viewed as integral parts pertaining to the good for the social whole. They are therefore not to be characterized in an instrumental sense, but are qualified as intrinsically or morally valuable parts of the whole ecosystem. We accordingly find that in the said object these elements are intrinsically valuable. In this way the non-anthropocentric value account of the said ecosystem is conceptually accommodated into this holistic ethic or the Aristotelian sense of total utilitarianism.

- Holistic utilitarianism defines moral protection of the total ecological community:

Following from the above discussion regarding the intrinsic parts of the ecosystem, the assumption then suggests that non-human individual members of a species and other natural objects are to be regarded as morally significant parts, as they are identified as integral parts of the whole system. According to this evaluation, the Bengal tiger, for instance, as it is being regarded as an endangered individual member of a species, as well as other species whose declining population are caused by the said environmental situation, must be qualified for protection by considering the contribution of individual members to the functionally valuable whole of which they are being ascribed as intrinsic or inevitable parts of. The manner of their protection should be aimed at optimizing the environmental situation and not worsening it, for the sake of maintaining the total value of the whole functional ecosystem in the region. This accordingly indicates that the concern for individual members must be estimated according to the value of the entire object, not from separate consideration of their values. Therefore, this holistic utilitarianism is itself capable of allowing the moral significance and so the equal protection of all parties involved in the value of the social whole. Thus the whole ecological community's interests are entitled into moral consideration and so for moral protection, according to the given ethic.

Once it is found that this holistic ethic equally protects the interests of all parties considered in the value of the said ecosystem, the view then strongly insists on not to use the ecosystem in the satisfaction of the individual's or human's interests. This assumption genuinely corresponds to the non-anthropocentric version of environmental ethics. The assumption, however, allows human beings, as a part of the ecological community, to use the natural environment in limited scale, or in the purpose of traditional activities, which presumably have no affect on the value of the ecosystem. Thus the non-anthropocentric moral message of Leopold's *Land Ethic* and its consideration for using the land in the given sense represents clearly the said form of utilitarianism. How then will this complete non-anthropocentric version of utilitarianism deliver its recipe for a general preservation policy or a morally accountable environmental policy in relation to such environmental situation? This type of utilitarianism considers that a human being or a decision maker is an inevitable part of the functional ecological whole in which the decision maker is identified as the ecological self. He/she then regards himself as a moral person who has a clear vision regarding his harmonious relation to the ecosystem. Accordingly, he considers that decisions concerning such policy will be estimated on the basis of the whole community's interests, and not in the sense that it will only affect on his own life.

As this is the main standpoint of the decision maker, the policy is then to be reflected on the basis of such justification in which he/she measures that the good life is equally a part of the whole. In other words, the good life or the object turns out as a moral subject and so is viewed as an intrinsically valuable part of the whole community's interest as well. This good life is therefore to be recommended as an object of subjective interest, in the sense that the subject puts it on a par with the whole community's interests, because it is congruent with his specific psychological tendencies which are inherently selected in the nature of the subject. This psychological profile essentially tends to inspire him to estimate the object with altruistic or natural feelings, as the object is equally proportional to the functional advantage or wellbeing of the whole community. In this consideration the decision maker estimates the good life and finds that it is completely identical to the community's interest. Thereby he finds a sensible and very strong reason to look after the community and ensure its wellbeing rather than destroy or harm it. This significantly implies that the decision maker's feeling based ethical consideration of evaluating the object is itself informed by the cognitive condition. In other words, Hume does not deny the role of human cognition in the feeling based ethical considerations. Thus the decision maker's intellectual horizon blends into the natural feelings. The assumption then provides strong ground for defending against the charge following from the functioning based preservation policy, that the feeling based value perceptions have a lack of such criterion. Thus the Humean-Darwinian moral psychology viewed with the bio-social and cognitive conditions, plays a key role in the policy making process of the decision maker

by evaluating the object in this way¹⁵⁸. On the basis of such measurement, the decision maker makes up his effort to exert a morally accountable choice by suggesting that the main obligation is to take the whole ecological community's interest itself into consideration in composing the protection policy. In this way the decision maker sets out the obligatory norm of the policy which appeals for enhancing the entire community's interest as far as possible, as it genuinely protects the interests of all parties involved in the community in relation to such environmental situation. In other words, the right environmental policy is that which determines only the whole community's interest in the highest sense. This policy then corresponds exactly to the other approach of Callicott, in which he considers the feeling based ethical arguments of the said philosophers in defining the view that the total functioning ecosystem itself bears the said moral status value, assuming individuals and others are inevitable or valuable parts of it. In this way we have found that this non-anthropocentric account of utilitarianism truly provides the firm rationale for the general environmental policy accountable for protecting and promoting as far as possible the total wellbeing of the holistic functional ecosystem. In other words, my explanation of the holistic utilitarianism in the given sense provides essential and sufficient room for evaluating the moral consideration as well as protecting and promoting the total value of the ecological community in such environmental situation. Therefore, this sort of utilitarianism is practically consistent with a general preservation policy or environmental policy concerning the said community, in defining the alternative decision model following from such environmental situation.

Conclusion:

I have considered my main objective of this chapter in two accounts. First, I have examined morally the adversarial effects caused by the decision of constructing the dam beyond the affairs of humans, to nonhuman entities as well as the whole ecosystem in the region. Second, I have considered a morally definable general policy in the purpose of protecting the value or values of the said natural entities in relation to this environmental situation. I have examined both assumptions in consideration with the normative philosophical account of environmental ethics. 1. I have found that non-anthropocentrism provides justifiable ground for accounting the moral status value of non-human entities as well as for the whole environment. For this purpose, I have considered an expansive view of utilitarian ethic in the sense of the non-anthropocentric version of utilitarianism of the environmental ethics. 2. I have considered Singer's extensive account of sentient utilitarianism. I have found that this approach is conceptually only capable of protecting the moral status value of individual sentient animals in its decision model. Accordingly, I have shown that the decision of constructing the dam

¹⁵⁸ . Wetlesen in Witoszek and Gulbransen, (eds.), 1993, p. 100-105. And, Wetlesen, 1999, *Environmental values*, vol. 8. no.3. P. 316-317.

significantly ignores the morally protective value status by inflicting an abnormal situation on the normal functioning of the individual animals in the region. I have characterized this sentient account of utilitarianism as a limited or individualistic account of non-anthropocentrism. I have counted this approach as a first step in dealing with one of several problems lying in the given environmental situation.

3. As part of considering the wider environmental problems in a total account, I have found that Callicott's account of Leopold's holistic description of ecology as well as its ethical assumption viewed in *The Land Ethic*, are significantly consistent with the said problem. According to the scientific account of the ecological discussion, I have found that the dam has seriously downgraded the functioning of the whole ecological community in the region. I have further brought this malfunctioning image of the community in view with the ethical discussion of *The Land Ethic*. I have found that Darwin's evolutionary ecological account of Hume's feeling based ethical values attribute moral status value to the whole functional ecosystem. I have accordingly shown here that the ethical aspect of Leopold's land ethic is basically built on the said version of the Humean ethic. Accordingly, I have justified that the decision of the dam simply disregards such value status, and so I have found that the dam is morally blamed for the unhealthy functional state of the whole ecosystem in the situation. 4. I have considered Aristotle's teleological account of the holistic ethic as a norm for a complete moral theory in accounting the moral protection of the value status of the whole ecological community. Whereas it is found that Callicott's non-anthropocentric ethical discussion of the land ethic is limited only to measure the value status of the entire functioning ecological community. Norton considers that this holistic ethic is significantly consistent with such a form of preservation policy. I have found that his consideration of this holistic ethic in the functioning value account of the weak anthropocentric preservation policy cannot firmly protect the total value of the holistic ecosystem. 5. In stead of this approach, I have found that the feeling based ethical value account of this holistic ethic firmly protect and promote the total value of the holistic ecosystem in its policy. I have accordingly characterized this holistic ethic as the complete form of the non-anthropocentric version of utilitarianism. I have referred this ethical account of an environmental protection policy, or a general environmental policy, to the consideration of an alternative decision model in finding a moral solution to the said environmental situation in the region.

This is how I have extended the traditional view of utilitarianism in a consideration of this environmental crisis, resulting from the decision of constructing the dam in the given region. In account of this expansive view, I have considered utilitarianism in the non-anthropocentric version of environmental ethics. In this form of the discussion, I have considered the individualistic account of utilitarianism, whose merit lies in protecting and promoting the

interest of sentient individual animals in its policy or decision model. In the further expansion of this utilitarianism, I have considered Aristotle's holistic ethic which I have characterized as the non-anthropocentric account of total utilitarianism, whose merit lies in protecting and promoting the total value or the feeling based moral value of the entire functional ecological community in its model of environmental policy. Given the merits following from both forms of non-anthropocentrism, I have found that utilitarianism stands firmly against the decision of constructing the Farakka dam in the region. I have therefore found that my consideration of utilitarianism have successfully managed to bring rightly the interests of individual members, as well as the interests of all the parties involved in the whole functioning community, into moral consideration, and so for promoting and protecting the said interest in an alternative policy on this environmental situation as well as forming a general policy of the natural environment.

Chapter 4: An analysis from the viewpoint of just distribution

“- - - in any particular case the
distributional question must be
addressed in the context of each
individual’s functional needs”.¹⁵⁹

- Amartya Sen

Introduction:

In the previous chapter, I have clearly examined the problems of individual natural entities as well as the entire environment in the moral account, following from the Farakka dam and the water dispute. In the discussion, I have not only considered their moral status, but also their moral protection from a viewpoint of environmental ethic. In this chapter, I shall primarily concentrate on the distributive arrangement of the Ganges water between India and Bangladesh from a normative ethical point of view. We have seen from the case study that Bangladesh and India finally reach a just distributive agreement about solving the Ganges water conflict between them. Despite this fact, a considerable problem emerges when Bangladesh points out that he/she does not really receive the due share according to the precept of the agreement. I consider that this perception has a normative philosophical justification by considering the rightness of the distributive equity in this situation. When it appears significantly difficult to implement accurately the moral objective of the distributive arrangement, then the questions arise: Is it really a fair agreement? How can it be verified? What would be a proper consideration for doing this verification? How can it be justified? And finally, can the justification be genuinely trusted? On the basis of these issues, I consider a combined notion based on the capability approach and the functioning view. The two objects are essentially related to each-other in the sense that one has corresponding affect on the other. This can be identified as the capability version of functioning. Or, the functioning view of capability. The application of each of them largely depends on the context of the discussion. I consider that this notion will be a suitable account of determining the right state of distributive justice, following from the distributive agreement of the water.

¹⁵⁹ See, Nussbaum, 1988, p. 11

There are only a handful of philosophers who use the capability account of functioning view to explicate distributive justice. Aristotle, for instance, considers a general sense of human's capability to function in relation to the distributive justice. The problem with his assumption is that it is not designed to consider all situations precisely. We do not consider the assumption as an essential requirement of determining particularly the capability of individual's function in a relevant situation.¹⁶⁰ Therefore, we find that the Aristotelian view is conceptually insufficient in dealing with our considered case. This requires me to consider other philosophers views regarding the capability version of the function view. I consider the view of Amartya Sen - a contemporary moral philosopher who comprehensively discusses the notion of evaluating the distributive justice of various occasions. Sen illustrates the capability account of the functioning view or the capability approach and the functioning view in a general account as well as illustrating it specifically when determining the state of an individual with regard to distributive justice.¹⁶¹ Both accounts have a moral and an instrumental sense and they are relevant to assess a particular situation following from the consideration of distributive justice.

In consideration of the moral account, Sen considers an evaluative space for identifying valuable or relevant information, and this equally constitutes norm or norms in consideration for determining the functioning and so the capability to function. In the evaluative space of the functioning view, Sen examines closely utilitarianism and the pluralist value account of morality, or informational based moral pluralism, in finding a suitable moral approach to assess properly the distributive justice of some arrangement.. He finds that the functioning account of capability approach is consistent with the informational account of moral pluralism. I consider that the pluralist account of the functioning view or moral pluralism is relevant for evaluating the state of distributive justice in various senses. Sen's consideration of moral pluralism is designed without accounting intuitionism. This challenges the credibility of moral pluralism in determining a complete account of distributive justice. I shall argue that moral pluralism is primarily concerned with moral value or values limited to defining the right state or judgement of distributive justice, and is not concerned with a complete assessment. I then consider that the informational account of moral pluralism is a right moral approach for examining the distributive justice of some arrangement following from the agreement of the Ganges water. This gives me justification to consider the pluralist account of the functioning view in examining the right state of distributive justice in this situation.

¹⁶⁰ For further information regarding the Aristotelian view on capability account of functioning, see Ross, 1998, p. 11-15, Nussbaum and Sen, (ed.), 1996, p. 46-47, and Nussbaum, 1988, suppl. vol. p. 32-33.

¹⁶¹ It is useful to point out that I shall use the term 'individual' as representative of a country in most part of the discussion in the chapter. However, I shall, in some cases, refer to the name of the country or countries directly, in accordance with the context of the discussion

In examination of distributive justice, the pluralist account of the functioning view emphasizes on the information of basic capability or individual's capability. The functioning view takes poverty as a normative standard whereby it examines the state of individual's capability as a part of identifying deprivation. In this account, the capability approach specifies two normative issues of poverty. One is relative poverty based on income centred view and the other is absolute poverty based on nutritional requirement or characteristic. I shall find that it is not relative poverty, but the nutritional characteristic of absolute poverty which gives moral value to the individual capability. This approach further suggests that water has nutritional characteristic or value which secures individual's capability to function, while the characteristic assessment of water is being considered for achieving the capability. I consider that the moral aspect of individual's capability lies in securing the nutritional characteristic of the water. The individual capability turns into a normative standard in order to judge rightly the implemental state of distributive justice of the Ganges water. On this reading, the capability approach emphasizes the freedom account of individual functioning as a prime notion. Sen characterizes the notion in two senses. I shall argue that the moral account of freedom attributes intrinsic value to individual functioning, while the instrumental version of freedom corresponds to the achievement sense of individual functioning. I shall further take both accounts of freedom into an estimation of India and Bangladesh, in a comparative assessment of functioning in relation to the morally accountable distributive agreement of the water. I shall find that Bangladesh is deprived of an equal sense of freedom in both accounts, which put the country in an absolute poverty situation deprived of the nutritional requirement of water. I consider that this significantly deprive the country's capability of functioning in a right assessment of distributive justice of the Ganges water. These are the main elements I shall put in the discussion of this chapter. I shall arrange them in the following way: 1. I shall illustrate the relevant aspects of the capability approach and the functioning view as a combined notion in two accounts. 2. I shall consider the informational account of the functioning view in finding its consistency with moral pluralism and the justification of moral pluralism for determining the distributive justice of some arrangement, following from the Ganges water distribution. 3. I shall consider the moral aspect of individual capability in focusing on the injustice state of distributive justice, whereby I shall argue that the deprivation of individual capability to function is not morally acceptable. 4. I shall focus on the freedom account of individual functioning in finding the deprivation of the freedom of Bangladesh in relation to the morally accountable distributive justice of the water. I shall argue here that the inequality of freedom of functioning does not justify the right state of the considered distributive agreement. Before finishing, I shall put a concluding remark of the chapter.

A. What is the capability approach?

In order to verify the equality aspect, or other distributive standards, with regard to the Ganges water, we must consider several relevant questions. What should be decisive factors to determine this? In which way can the role of this factor be known precisely? What counts as relevant in order to know its effectiveness? What should be the fundamental in determining the distributive equity of the water in such situation? And finally, how can these factors be justified? This manner of assessing the distributive justice of the solutions to the water conflict is not only limited to the designation of fair allotment of the item. The justification of such fair arrangement is substantially related to an evaluation of how it effects practically on the state of the individual or the individual's life involved in the situation. Accordingly, the main purpose of such verification is to define the condition of individual's life. To this extent, the verification calculates the state of distributive justice in the given term of individual's life. The essential criterion to determine this is two closely related elements that concern whether individuals have the capability to carry out their functioning aspect of life as a result of the distributive agreement. Hence the concept of *capability* is one element in the assessment of distributive justice of a situation. The main task is to focus on the actual implementation to determine the distributive justice of the arrangement, by measuring its effect primarily on individual's capability. So this approach can be characterized as the capability version of distributive justice, since it accentuates that realization of distributive justice is assessed by the functioning level, or the functioning aspect, of individuals. Accordingly, the capability approach considers the functioning aspect as an integral part of its conceptual framework. Thus, the functioning view and the capability approach must be combined in order to determine the distributive justice of a situation.

It clearly appears from the above discussion, that the accurate way of defining the notion of capability inevitably depends on a consideration of its *functioning* aspect. Therefore, it is essential for us to look at the way the functioning notion is viewed within the space of capability. We find that the notion of functioning can actually be assessed in two senses. One aspect is connected to the distributive justice with regard to individual's capability. Accordingly, the main task of the functioning view is to select and evaluates various information pertaining to individual's capability. The other aspect is concerned with the assessment of individual's capability of functioning. The main objective of this view is to examine the fairness of the distributive arrangement by measuring whether it accurately equalizes individual's capability of functioning in such situation. In this account, the functioning aspect of individual's capability can again be assessed in two senses. One aspect is primarily concerned with the fundamental element or elements of an individual's existence, such as being adequately nourished, being well sheltered, being in good health and so forth. In

other words, these functionings are essential to determine an individual's ability to exist in a particular sense, i.e. without deficiency of a fundamental element. These elementary aspects of functioning are the *basic* capabilities of an individual. Other functionings are significantly different, and concern various elements, goals or goal pertaining to the normal or actual capability of an individual.¹⁶²

This discussion shows that the capability approach and the functioning view as a notion of combined elements or a combined principle, allow us to measure a person's life in various situations. They are closely associated with each other in the way that one cannot be realized without other. So it appears that one aspect is oriented to define an individual's basic capability to function in certain sense. This can simply be identified as the individual's capability to function in a particular situation – or in order to function at all. The other is concerned with the individual's actual capability to achieve a variety of functionings, which leads to a full life that may lead in various directions. Both assumptions belong to a notion which combines the capability approach and the functioning view. It suggests that functioning can be regarded as a basic component to determine the capability in relation to various aspects of the distributive justice. This assumption is conceptually not significantly different from determining the capability aspect of the functioning view, as they are essentially related to each other. This does not necessarily imply that they are same. Both aspects must be viewed as relevant to determining an individual's capability and so to his/her functioning regarding the consideration of distributive justice.

B. Evaluation of factual information and the functioning view:

The preceding discussion has defined the relationship between the individual's capability and his functioning in a way that combines the capability approach and functionings. I have pointed out that on various occasions the assessment of relevant information related to individual's capability of functioning, plays a central role in measuring the state of distributive justice. Hence, this can also be characterized as the informational element of distributive justice. The capability account and the functioning aspect of distributive justice give rise to some relevant issues: How can the relevant information be assessed in the given account of distributive justice? Is it essential to take all sorts of information into account for correct determination of distributive justice? And finally, what exactly does the information entail in judging the moral estimation of the capability and functioning account of distributive

¹⁶² Sen indicates clearly in the discussion of the capability account of the functioning view, that it is possible to make out the relationship between the capability and the functioning in various senses. Accordingly, I examine the relationship between them. For further information in this regard, see Sen in Nussbaum and Sen, (ed), 1996, p. 32-33.

justice? In finding answers to these questions, functionings can take various types of information into account. The way informational analysis is organized can be characterized as an evaluative space.¹⁶³ Thus a set of functionings composes an evaluative space that identifies valuable elements or aspects pertaining to the assessment of individual's capability to function in a relevant situation.

Let me now try to give a brief account of how the functioning view takes the information of the considered state of distributive justice into account for its purpose of evaluating the situation. Its main aim is to explain the relation between standards of distributive justice and the sort of information to be gathered in the evaluative space – i.e. which information will be regarded as relevant to determine the individual's capability to function. In this criterion of calculation, other types of information might not have such important role, and so they are discounted or considered to be irrelevant. Sen, accordingly, remarks:

The need for selection and discrimination is neither an embarrassment, nor a unique difficulty, for the conceptualization of functioning and capability.¹⁶⁴

In this process of determining the worth of the relevant information, it appears that what the functioning view includes in the evaluative space is to be referred to as potentially valuable, and what it excludes is to be regarded as negligible. Given the crucial nature of identifying the objects of value or information, I shall first turn to look at the information which the functioning view counts as ignorable. Thereafter, I shall focus on the information which it permits to be regarded as countable and so valuable for determining the capability account of distributive justice relevant to such situation. And, finally I shall give the justification for considering this notion of the capability account of the functioning view, or the functioning account of the capability approach, in determining the distributive justice of some arrangement following from the case of the Ganges water.

- The functioning view and utilitarianism:

Given the pattern of informational analysis, I shall first take into account as an example the view of utilitarianism, which primarily assesses the state of affairs on the basis of single value account or value information.¹⁶⁵ The central reason for considering utilitarianism is to show why the functioning view goes beyond the single value aspect of utilitarianism, as a part of the selection process of the evaluative space. In this consideration, I shall give a brief account regarding the way the functioning view assesses the framework of utilitarianism. Accordingly,

¹⁶³ See, Sen in Sen & Nussbaum (ed.), 1996, p. 32-33

¹⁶⁴ Ibid., p. 32

¹⁶⁵ See, Sen in Honderich (ed.), 1985, p.130-132

utilitarianism is, indeed, viewed as one form of consequentialism.¹⁶⁶ The assumption of consequentialism is normally referred to as a doctrine suggesting that the rightness and wrongness of an action or choice is mainly determined by determining the consequential information of a situation or the state of an object. In this consideration, the functioning view examines closely the merit and demerit of consequentialism. In concerning the merit, the functioning view finds that the consequent state supplies important information as to assess the state of affairs in terms of the good or bad effect of the action. Accordingly, it considers that the consequent state is important in judging the state of a situation, and so it maintains a crucial role in order to define the moral aspect of the action. In this connection Sen specifically point outs that “consequent state of affairs may not be the only thing that matter, but it can nevertheless matter”.¹⁶⁷ The functioning view therefore considers that it is essential not to ignore the information attached to the consequent state, as it provides information as to whether the moral aspect of the action is genuinely permissible or reaching to its moral objective. Thus the functioning view takes the consequential version of information into account, and primarily allows consequential aspect of information into the evaluative space. However, this does not necessarily implies that the functioning view actually acknowledges the way consequentialism defines the consequent state of affairs as a part of justifying the rightness of action. Rather we shall find that the functioning view considers such a view in critical sense. With this indication, I shall now look at the demerits of consequentialism.

Given the account of how the functioning view is regarding the consequent state in its evaluative space, the crucial question is: What is being considered wrong with the view of consequentialism? In response to this question, it is worthwhile to interpret consequentialism as a form of utilitarianism, since the value aspect of a consequentialist approach is precisely regulated by the view of utilitarianism. In this sense, utilitarianism takes the main essence of the consequentialist approach as a corner-stone, by attributing value on the goodness of the consequent state in terms of utility. In this characterization, the utilitarian version of consequentialism emphasizes primarily on utility as being regarded the only intrinsically valuable information which is actual for determining the good aspect of the consequent state. In this spirit, it further advocates for achieving utility as much as possible, since the goodness of the considered state is only definable as such value, or as relevant to such value account.¹⁶⁸ On this account, utilitarianism claims that the rightness of the action is finally determined by attaining maximal utility in the consequent state. Utilitarianism is then in most cases tempted

¹⁶⁶ I have already discussed the notion of utilitarianism in various contexts of the previous chapter. I will consider once again certain aspect of it, in the light of the current context of this chapter.

¹⁶⁷ Sen in Honderich (ed.), 1985, p.135

¹⁶⁸ It is worthwhile to point out here that utilitarianism generally interprets the utility value as pleasure and pain, happiness, interest and the like, relevant to measure psychological events of a situation.

to constitute an action in such a way that the right action is itself to be calculated by determining the utility type of information. It does so because it is essentially relevant in order to achieve the considered amount of utility as output of the action. Accordingly, utilitarianism insists that it is useful not to give equal value on non-utility types of information (for instance; justice, freedom and so on), as the assumption creates a conflict of values when determining the considered state. It is then sensible not to consider other information in evaluating the value status of the consequent state. Instead utility is to be taken as a basic standard in order to qualify the merit of all types of information so that the conflicting situation is not to arise.¹⁶⁹ In other words, the only informational aspect it regards as proper is utility, and so other types of information is to be regarded as irrelevant and so useless. Utilitarianism thus imposes *informational-constraints* in the form of closing the window for considering directly the usage of other types of valuable information regarding the state of affairs.

In response to this view of utilitarianism, the functioning view gives a critical account of it on the basis of two aspects. First, it finds that utilitarianism remains in an indefensible state as long as it regards the rightness of the action to be judged only on the basis of utility assessment of the consequent state, as it does not consider the action itself in a moral account. On account of such a defect, the functioning view insists that the utilitarian action is to be blamed for lacking of adequate moral accountability. The other defect is connected to the way utilitarianism takes utility as the only value in order to judge the informational spectrum of the consequential state of affairs. In this regard, the functioning view points out that in this way utilitarianism makes a barrier to the consideration of other types of valuable information in relation to the considered state of affairs. Accordingly, it points out that utilitarianism considers the rightness of distributive justice by adding up primarily the utility type of information, or sum ranking in the sense that the different types of utilities are best valued by summing them in aggregate, and ignoring the distributive aspect itself as an important element in measuring the considered state of affairs. How then can utilitarianism judge the rightness of distributive justice without considering justice itself in the prime account? In this manner of scepticism, the functioning view maps out that the standing order of utilitarianism is limited by not giving importance to non-utility types of information, or by ignoring other valuable information in judging the state of affairs. Given the lack of considering other types of information, the functioning view then concludes that utilitarianism actually defines the situation in an inadequate way. Therefore, the functioning view ignores utilitarianism in the framework of its informational analysis concerning the distributive justice of some arrangement.

¹⁶⁹ See, Sen in "The Journal Of Philosophy", vol. LXXXII, nr. 4 April 1985, p. 176-178

- Functioning view and moral pluralism in evaluation of distributive justice:

Once it is clearly found that the functioning view goes beyond utilitarianism in the evaluative space, the question then arises: What would be a non-utilitarian version of moral approach that can examine appropriately the consequent state of distributive justice in various valuable values or information? In response, the functioning view of the capability approach takes the notion of pluralistic value accounts of morality or *moral pluralism* as an alternative to the utilitarianism. However, confusion arises from the consideration of identifying the use of plurality of moral principles with *intuitionism*. I shall find that these two notions are not essentially related and the confusion has no base. In this respect, I consider a relevant view of John Rawls who has discussed comprehensively regarding the various aspects of justice. He carefully accounts one of these perspectives in his most celebrated book “A Theory of justice”, first published in 1971. In focusing on the relationship between intuitionism and the pluralist account of the justice or distributive justice, he remarks that “a conception of justice can be pluralist without requiring us to weigh its principles by intuition.”¹⁷⁰ In considering this assumption, let me first concentrate on the relevant features of intuitionism and moral pluralism so as to figure out the difference between them. In a general sense intuitionism states that if there are many ultimate principles of justice and they are not in a hierarchy, then according to Rawls, intuitionism might play a role in striking a balance between them. This not necessarily implies that intuitionism maintains a substantial or an absolute requirement for reaching a judgement between competing principles of justice.¹⁷¹ This defines that intuitionism - unless radically redefined - is a claim about how the moral structure may be derived and supported (i.e., whether by intuition only), whereas pluralism is a claim about the form of moral structures or values. The two things are different and so not related to each other. Thus it has no strong base to claim that intuitionism is a requirement necessary for balancing the values of distributive justice.¹⁷² Therefore, Rawls points out rightly that the pluralist sense of justice does not require weighing its principles or values by intuition. In this consideration, the functioning view then takes essentially the pluralist base of morality into account in the evaluative space. In other words, the functioning view itself (and so the capability approach) is embodied in moral pluralism or the pluralist account of distributive justice. Thus, the functioning view of the capability approach is essentially accommodated with the informational base of moral pluralism in evaluating the distributive justice of some arrangement in a relevant situation.

¹⁷⁰ See, Rawls, 1973, p.34

¹⁷¹ Ibid., p. 34-35

¹⁷² See, Sen in “The Journal Of Philosophy”, April 1985, vol. LXXXII, p. 175-176

- The justification for considering a pluralist account of the functioning view and an assessment of distributive justice:

There are at least two different ways of defining moral pluralism. One is in terms of plurality of principles or values, which is identified as *principle pluralism*. The other is in terms of plurality of informational variables. It is identified as *information pluralism*.¹⁷³ In considering the second approach, Sen regards that information pluralism is primarily based on various types of information used for the justification of moral value or principle. As he puts it: “. . . use of an “informational” approach to moral analysis which focuses on the admissibility and use of different types of information in moral valuation.”¹⁷⁴ The informational approach, in this sense, corresponds to the meta-ethical discussion for making a judgement of a moral value. However, this meta-ethical discussion falls outside the framework of this chapter or thesis, as I am specifically concerned with normative ethical discussion. For this reason I will avoid the meta-ethical discussion, but will be considering that the importance of such information is itself to be referred to as an intrinsic value account of moral pluralism or moral information. Hence, I regard principal pluralism in terms of information based moral pluralism. Accordingly, this informational account of moral pluralism is straight forwardly compatible with the evaluative space of the functioning view based on various valuable information. In other words, the moral justification for the evaluative space of the functioning view (and so for the capability approach) lies in the informational account of moral pluralism. Thus, the evaluative space of the functioning view is itself an inevitable part of such moral pluralism.

The functioning view is intrinsically attached to the pluralist account of morality without being weighed by intuitionism. Several moral values exist in the evaluative space or moral structure of the pluralist values, which is identified as non-integrated. In a way the existence of several non-integrated principles or values makes concern for the credibility of the functioning view to assess properly the distributive justice of some arrangement. This matter further leads to characterize the principle of combined views in the pluralist moral approach or the functioning view of the capability approach, as not in a correct moral position to assess completely the distributive justice of some arrangement. Sen takes into account this problem of the non-integrated values as well as the confusion with the credibility issue of the functioning view. Accordingly, he takes steps for considering further clarification of the role of the non-integrated pluralist moral structure and for finding credible ground for determining rightly the distributive justice of some arrangement. I shall find that the issue of non-integrated values is not an accountable problem for moral pluralism in the moral consideration

¹⁷³ Ibid., p. 176. My consideration of identifying moral pluralism in the given two ways is following the viewpoint of Sen.

¹⁷⁴ Ibid., p.169.

of values and norms pertaining to state of distributive justice. Thereafter I shall show that moral pluralism is not mainly concerned with finding a complete assessment, but emphasizes particularly on the role of values constructing the distributive justice of some arrangement. In reaching to these objectives, I shall primarily illustrate the discussion from the viewpoints of Sen.¹⁷⁵ Accordingly, let me first concentrated on the non-integrated moral structure of pluralism. In reference to the event, Sen considers a statement following from the viewpoint of John Stuart Mill. The statement concerns the problem lying in moral pluralism.

For if there were several ultimate principles of conduct, the same conduct might be approved by one of those principles and condemned by another; and there would be need for some more general principle as umpire between them.¹⁷⁶

Sen points out that Mill in the above statement is not disputing the case of having pluralist moral structure with a general or combining principle (what he calls an “umpire”), but he rather insist only on the need for such a principle for the pluralist structure. Mill is concerned to show that if this is the way pluralism is to be dealt with, then it would again be true that there is “but one” ultimate standard of consideration. According to Sen, one could dispute the role of the umpire, but this does not obliterate the continuing role of the plural principles in the moral consideration of actions, states, etc. This is then does not really much hang on how much a system of the pluralist moral structure is described. Thus, Sen denies that non-integrated values are an intractable problem for systems of moral pluralism. Therefore, pluralist account of the functioning view or moral pluralism has no problem in determining morally the distributive justice of some arrangement.

Now for the sake of the argument, I follow the quoted claim by Mill. A pluralist moral principle – and the functioning view in particular - must have an umpire that balances various values to determine the state of distributive justice, however we find that the principle has difficulty in balancing the different non-integrated values. Thus the functioning view has problems with determining the complete distributive justice in the pluralist sense. The important question then follows: Is this incompleteness an embarrassment for the functioning view? In response to this I shall argue here that a complete assessment is not the main objective of the functioning view. Rather, it is primarily concerned with the value or values which constitutes the framework of moral pluralism. I shall then argue that the functioning view considers relevant value or values as important. Indeed they help define the right state or the judgement of distributive justice. Accordingly, I will conclude that the functioning view of the capability approach is a sensible position to determine properly the distributive justice of some arrangement, in particular the case of the Ganges water. Finally, I shall consider (i.e.

¹⁷⁵ I consider primarily justification of the moral pluralism from the viewpoint of Sen. He discusses this carefully in the following space of the same text. Ibid., p. 176-181

¹⁷⁶ Ibid., p.176-177

apply) this functioning view to show why the distributive justice does not reach at its objective in the end.

When it is perceived that the functioning view assesses the distributive justice of some arrangement in incomplete sense, some other requirement or criterion may be considered for finding a complete assessment or the moral good of distributive justice. We shall find that that this would do nothing to the complete assessment of distributive justice, which essentially continue to be regarded as incomplete. Accordingly, the other requirement can be stated in the following sense. This requirement indicates that state 'x' is more just than 'y', and that the states 'x' and 'z' simply cannot be compared in terms of distributive justice (i.e., neither is 'x' more just than 'z' according to the consistency or criterion of these three alternative states, nor can they be seen as equally just; they are simply non-comparable as far as the distributive justice is concerned.) Accordingly, this would continue to be so even if the incompleteness could be removed in the over-all assessment of distributive justice, by the supplementary use of the other requirement. But this does not require that the chosen alternative is seen to be "best" in the set of feasible alternatives, since there is no room for characterizing the best alternative as the given continuing incompleteness lies in the pluralist state of distributive justice of our moral ranking. Accordingly, such completeness is not the main or prior requirement of the legitimacy of a moral principle in discussion of the moral pluralism with its full structure of values or principles. Therefore incompleteness is not an embarrassment for the pluralist account of the functioning view. In other words, the functioning view of the moral pluralism is neither concerned with non-integrated values, nor is it concerned for the complete assessment of the distributive justice of some arrangement. It rather considers that each relevant value itself is important, which constitutes the state or fabric of distributive justice. Moral pluralism regards this as significantly important, as the account actually paves the way to define the right assessment of the distributive justice of some arrangement. This gives me the ground to consider the relevant value or values pertaining to assess the right state of distributive justice. In this way I shall find whether the importance of such value has been properly considered in determining the given state of distributive justice. If it is found that the importance of each relevant value is not viewed accordingly in determining the consequent state of distributive justice, this in a way will justify the claim stated by the individual (or the individual country) involved in the situation, that he or she is really deprived as a result of distributive justice of the Ganges water. In other words, distributive equity does not take place in the situation. Given the credible value accounts of moral pluralism, I therefore consider that the functioning view of the capability approach is significantly consistent with attaining the main objective of this chapter. I shall in the following discussion consider the relevant matters of the chapter according to the given principle of the moral pluralism.

- The functioning view and assessment of distributive justice as an objective of moral action:

Given the justification of moral pluralism, the function view further assesses distributive justice in the evaluative space in order to find the reason why the distributive justice does not equally reach its objective in the consequent state of such moral action. The informational version of the functioning view takes this issue into account. Accordingly it insists that a moral action is not necessarily assigned to produce similar moral value in the consequent state of the situation. Let me try to explain the assumption more clearly. I consider here two states (for example: X and Y) which are associated with an identical situation. 'X' represents here a state in which 'p' refers to a moral action in terms of distributive justice and 'Y' represents the consequent state. The functioning view, in this regard, figures out its main argument in the following sense. It suggests that although the moral action 'p' is taken in the state of 'X', it does not necessarily indicate that 'p' must emerge as the equal moral value in the consequent state of 'Y'. In other words, even if an action is deemed morally appropriate or just in one state, this does not necessarily imply that it would have the same moral value in another situation.¹⁷⁷ According to this consideration, it is significantly difficult to justify two states of the same situation in an equal account of judgement. This is why we find that the traditional account of distributive justice does not manage to achieve the same moral goal at the end, in this distributive arrangement of the Ganges' water.

C. Basic capability:

The foregoing discussion insists that despite consideration of the moral action, or the criterion of distributive arrangement which is designed on the basis of moral judgement, it nevertheless does not orchestrate its moral objective at the end of the situation. This assumption leads to powerful questions, following from the normative as well as the epistemological point of view. What actually then determines the right action rightly? And, what is the objective of distributive equity in practice? How can the objective of distributive equity be known in practice? In consideration of these important issues, the functioning view of the capability approach leads us to examine the informational state of distributive justice in another way. This approach emphasizes that if distributive justice does not appear in its implemental stage, does it then indicate that injustice or deprivation has taken place instead? If it is so, how can this be assessed? In this consideration, the functioning view gives importance to particular information pertaining to a subset of information dealing exactly with the realization of such deprivation. So it focuses on the information relevant to identify whether one is genuinely deprived, in order to analyse what is permitted in the framework of just distribution. The

¹⁷⁷ See, Sen in "The journal of philosophy", April 1985, vol. LXXXII, nr. 4, p.172-173

functioning view thus claims that deprivation can be determined precisely by looking at the impact of a situation on the state of the individual or individual humans involved in the situation. The state of the individual is measured here in terms of the essential elements that define a life in calculation of vital needs and interests. On this account, if the state of the individual indicates that he no longer has the *basic capability* to secure or meet his functional needs, this highlights that he is significantly deprived in the consequential or the real assessment of distributive justice. The functioning view, accordingly, considers that the basic capability of the individual provides a normative standard in order to verify the distributive equity in view of such deprivation.¹⁷⁸ The notion of basic capability is to be phrased here in the sense that an individual is being able to do certain basic things or have crucially important functioning as a result of the distributive equity following from the situation. This notion can also be interpreted in the sense that the distributive equity must secure the requirement of an individual's basic capability to function in a minimally acceptable level. Otherwise the individual would be counted as being deprived as a result of such moral event. Such deprivation is not acceptable according to the capability version of distributive justice or the informational version of moral pluralism combined with some distributive requirement... Thus, the ability to move about is a fundamental factor for identifying the individual's basic capability to function.¹⁷⁹ However, I shall in the following focus on the assumption of the individual's basic capability in such a way that will help me to know and so to be able to measure normatively whether the individual has really been deprived or whether inequality has taken place in the consequent state of the distributive equity of the case which we are concerned with here. This perception will eventually give us to the answer of the questions which I have raised at the beginning of this paragraph.

- Individual's basic capability and poverty in evaluating distributive justice:

As a determining factor in examining the state of the distributive equity in the informational account of moral pluralism, the main task of the basic capability is to find the relevant or the particular information which can properly measure the criterion of injustice or deprivation in such situation. But, how can this be identified? In this respect, Sen notices that deprivation has connection with poverty and he asserts: "Being poor has clearly much to do with being deprived . . ." ¹⁸⁰. Hence, the concept of poverty is accommodated into the framework of basic capability.

¹⁷⁸ It is worthwhile to mention here that the individual's capability can be interpreted as the individual's basic capability, since it is viewed on the basis of the fundamental aspect of the individual's functioning. Accordingly, there is no significant conceptual difference between the notion of the individual's basic capability and the individual's capability in consideration of the functioning account. I shall, however, use the term individual's basic capability or individual's capability according to the context of the following discussion.

¹⁷⁹ Sen, 1982a, Oxford, p. 367-368

It is therefore worthwhile to throw light on the discussion of poverty, as it contains the relevant qualification for determining precisely the standard of the minimally acceptable level of individual's capability or deprivation as being followed by the given distributive arrangement of the Ganges water. In other words, the assumption of poverty precisely conveys that if an individual is not secured for meeting the given estimation of capability, this is used to define him as significantly deprived or below the poverty line. Holding the qualification, the basic capability finds that the notion of poverty is itself intrinsically important in the discussion of distributive justice, and so it gives essential value to the view of *poverty*. Thus, the view of poverty is integrated into the framework of basic capability or the plurality account of distributive justice. In the following step it is therefore necessary to focus on the discussion of poverty as it is being considered for identifying the deprivation of individual's basic capability which relates to this moral account of the distributive arrangement.

- Identification of poverty:

The concept of poverty is perceived in different ways from one society to another or one country to another. Accordingly, it turns out difficult to identify specifically who should be counted as poor. However, we notice here that there are two approaches of identifying poverty which receive great attention. One of them identifies the poverty line by determining primarily the individual's actual income or the economic factor in a society. The approach is known as *relative-poverty* or relative deprivation. This view is being considered as a relevant factor for judging the poverty level of rich or advanced countries (for instance; countries in the Western Europe, North America and the like). The other view considers the nutritional state of an individual as a basic standard in order to identify the poverty level of a society. This view is regarded as *absolute poverty* or absolute deprivation. The perception is usually assumed to be a relevant factor for defining the poverty level of people who live in less developed or poor countries (for instance; countries in the Indian-Sub continent and others in the Third World). Accordingly, the two approaches focus on two different elements in order to identify the poverty line. I shall show in this regard, that the relative approach provides a misleading picture in identifying the poverty line or the deprivation of individual's capability in the sense of a minimally acceptable level. Instead, I shall rather find that the absolute approach of poverty identifies the poverty line in an indisputable sense, or is defining properly the deprivation of individual's basic capability in a relevant situation. The assumption will actually provide me with a basic standard to justify the point that one party is really deprived in terms of determining the basic capability, following from the morally accountable

¹⁸⁰ Sen, 1982b, Oxford, p. 15

distributive arrangement of the Ganges water. In this direction, I shall further show that the moral aspect of the individual's basic capability lies in meeting the consideration of the nutritional requirement pertaining to the river's water. In purpose of attaining the given objectives, it is necessary to look closely at both concepts of the poverty discussion.

- Relative Poverty:

There are some people in a rich society who find themselves living in a miserable condition. In calculation of life-style, they frequently claim that they are clearly deprived of securing or meeting what they have learned to be the requirement for a minimum acceptable level of basic capability as a part of their living-standard relating to others. Hence, the discussion of relative poverty appears in identifying the poverty level of a rich society. The claim of characterizing their inadequate life style stems particularly from the consideration of the existing criterion of living standard in the society where they live. Accordingly, an individual finds himself living under the estimation of the poverty line in relation to others. Thus the notion of relative poverty is accommodated in the discussion of poverty. The poor individuals of such a society usually blame their insufficient earning on failing to reach the considered estimation of capability relative to the others. Hence, the relative approach takes an income-focused analysis or the actual income into account, as a fundamental criterion in order to identify poverty in the considered society. Proponents of the given approach, however, identify the poverty in various senses. Some of their crucial and relevant arguments I shall in the following examine closely in finding the justification for identifying such poverty. Accordingly, I shall first illustrate each argument with their point of view, and thereafter I shall put my own account in response to the respective argument.¹⁸¹

I. The conventional sense of living standard:

One way of identifying the poverty line in the relative approach is viewed with the conventional or absolute sense of living standard in a rich society. The proponents of this notion calculate the poverty line in view of the idea of "absolute" needs. The assumption of such need in connection with living standard is perceived in the sense of absoluteness which

¹⁸¹ In determining the notion of relative poverty, Sen examines it in the sense that he first puts each argument according to the viewpoint of a proponent or proponents of the relative approach. Afterwards, he sets each view in critical sense whereby he places his own argument in justification for disagreement with the respective account of the relative approach. I shall follow the same style regarding aspects of the relative approach. In this connection, I shall primarily focus on the viewpoints of Sen in discussion of the relative approach. He considers this his book "Resources, Values and Development", published in Oxford, 1984. He discusses comprehensively on arguments of the relative poverty in the chapter "Poor Relatively Speaking". In this regard, I shall mainly concentrate on the following pages of the chapter, p. 327-332.

goes over time. Given this calculation of the living standard, they find that necessities of life are always changeable due to social mechanism in different times and places. Therefore, they propose that the considered notion of living standard is to be judged by looking at the average rise (or fall) in real income. Accordingly, they insist that the effective way to define poverty relates to the given sense of income or living standard in the society. We shall find that the way of defining the idea of need in the conventional sense of living standard, suffers from a general defect. Accordingly, the absolute account of needs is not the same thing as fixity over time. The main reason for taking this judgement is that the relativist view sees deprivation in terms of a person's income or house holding matters, as being able to achieve less than what others in the society have in relation to necessities of life. Accordingly, this relativity is not to be confused with variation over time. So the fact of "the necessities of life" are not fixed, neither in the variation of time nor in the idea of absolute needs. It is normally admitted that the poverty line will be the function of some variables in terms of both time and place. Accordingly, there is no prior reason why these variables might not change over time in relation to the living standard and similarly to the idea of "absolute" need on which the considered living standard is granted for. Therefore, the relative approach, as based on the conventional sense of living standard in view with the absolute need, is not able to identify precisely the poverty line of an individual in the society.

II. The living standard in contemporary sense:

Some proponents of the relativist approach are tempted to identify poverty not by determining it in terms of some historic or traditional account of living-standard, but they replace it with an assessment of contemporary standards of living. The reason for considering living standard in this direction, relates partly to their estimation of human's "wants" in new dimensions. On this account, they find in general that the prosperity of society is continuously increasing. Accordingly, this leads them to insist that living standard is essentially consistence with the contemporary sense of prosperity. By such a way of calculating living standard, they find that poverty is likely to persist. They argue for the view that there are always certain sections of people who are badly off relative to the average individuals in the society. The main cause for acknowledging this is that these people earn relatively below the average income. Therefore, the proponents of this approach propose that it is essential for society to assist those who are relatively poor. It is, however, difficult for us to agree with their fundamental view that increasing prosperity in living standard brings certain section of the people under the poverty level. Accordingly, the rising of the living standard might still imply a general decline in prosperity which brings a lot of people into misery due to a severe recession or depression in the situation. Nonetheless, this does not necessarily indicate a sharp increase of poverty, since

the relative situation of the society does not change. Therefore, we find that there is no justifiable ground for accepting the way proponents of this view attempts to identify poverty.

III. The Policy Definition:

In recent study of poverty in some rich societies (for instance; U.S.A. and Great Britain), the poverty line is conceptualized in the consideration of *Policy definition* of poverty. This suggests that it is a level of income which is seen as something relevant to define the poverty line. The proponents of this approach accordingly make the following comment: “the society feels some responsibility for providing to all persons”.¹⁸² On account of such perception, this policy insists that the individuals who earn relatively below the average income would be identified as poor and so they will be followed up. The policy then recommends for supporting them so that they can adjust their income along with the average income of the society. On this recommendation, the policy is characterized as the *Official Supplementary Benefit Scale*. The main purpose of this scale is to reduce the number of poor people in the society, by providing the given support in the form of supplementary benefit scale.

The calculation of this supplementary benefit scale is largely based on the assessment of facts relating to consistent revision of the average income as well as the changing nature in the cost-of-living on monthly basis. Seen the purpose and manner of determining the facts as required for implementing the supplementary benefit support, the state or the government takes certain steps in order to deal effectively with the poverty in the following manner. The authority raises the supplementary benefit scale upwards faster than the facts for implementing the benefit scale mentioned in the above. Let me explain this in following an example. The example indicates that the state primarily defines an individual as poor, if his average income is below 10,000 (ten thousand) U.S. dollars at a given time. After determining the given facts in terms of the revision of the average income as well as the nature of the living cost, the state is tempted to revise the previous poverty line. It then constitutes a new benefit scale which states that the individuals who have an income under 20,000 (twenty thousand) dollars, are to be counted as poor. In other words, the considered figure (USD 20, 000) defines the demarcation line of poverty in the current assessment. According to the policy definition of poverty, these poor people are qualified for receiving supplementary benefit from the state in order to meet the average income of the society. According to the purpose of the supplementary benefit, it emphasizes that their impoverishment will eventually be eliminated. Given the aim and nature of the policy definition of poverty, I shall find that this provides a misleading picture in defining the poverty line. Accordingly, a puzzling

¹⁸² Ibid. p.332

question follows: Can the application of supplementary benefit scale be able to reduce the number of poor people in the community? In response to the question, I shall show that it actually increases the number of poor people rather than reducing it. Accordingly, the policy definition of poverty revises the former assessment of a poverty line of ten thousand dollars (USD10, 000) in application of the supplementary benefit. Then, the revised poverty line which is standing at 20,000 dollars, includes the people who were already counted as poor under the poverty line of the previous figure (USD10, 000). However, the new figure of the poverty line actually also includes an additional number of people as poor, that is the people who earn more than 10,000 dollars and below 20,000 dollars. These people normally would not be regarded as poor under the poverty line counted for in the previous figure. We thus find that the policy definition of poverty or supplementary benefit scale, in fact increases the number of poor people in place of reducing this, even though these people receives more benefit than according to the previous figure of identifying the poverty level. Therefore, we consider that the policy definition of poverty in the sense of supplementary benefit scale is misleading in defining the poverty line.

- Absolute Poverty:

As we have already seen in the above discussion, where it is explicitly found that the various arguments based on the income centred view of the relative approach, do not manage precisely to identify the poverty line. Each argument has eventually appeared as controversial. Thus, the relative approach is not persuasive in identifying accurately the poverty line, and so for defining the minimally acceptable level of the basic capability in a rich society. How can then poverty be identified correctly? In an attempt to find the answer to this question, we now consider it as sensible to follow in the discussion of *absolute poverty*. The absolute approach touches fundamental issues of an individual's life in the discussion of poverty. In a way it is not necessary to ask any further question in relation to identify who is poor in a society. The absolute approach puts, for instance the events of famine, starvation, malnutrition or the equivalent to such a visible hardship state of individual's life, as central elements in consideration of poverty. Each event it regards as being a part of acute poverty and so each of them cannot be reduced in further assessment. In this way the approach is not concerned with the matter of what the relative pattern of individual's life within a society is. Hence, significant difference lies in identifying the poverty line between the two approaches of the poverty discussion. In respect of the given consideration, absolute poverty genuinely overrides the relative matters of individual's life. In the way it touches precisely the main theme of the poverty discussion. As Sen remarks in this consideration:

Indeed, there is an irreducible core of *absolute* deprivation in our idea of poverty, which translates reports of starvation, malnutrition and visible hardship into

diagnosis of poverty without having to ascertain first the relative picture.¹⁸³

According to the above statement, we perceive the fact that absolute poverty provides a transparent picture in relation to identify the poverty line by concentrating on the basic issues significantly relevant to the survival state of individual's life. In other words, the perception of the absolute version of poverty itself constitutes a vital reference point to measure the fact whether an individual is absolutely deprived in the requirement of securing the basic capability in a relevant situation. Thus, the absolute sense of poverty itself qualifies as an essential essence in the discussion of individual's basic capability. Therefore, the discussion of absolute poverty is intrinsically valued and so is accurately consistent with view of the basic capability.

However, absolute poverty is often traceable to the people of poor countries, as famine or hunger haunts them repeatedly. In most cases, it is observed that famine or such apparent hardship in the life of poor people, is primarily being blamed for malnutrition or lacking of nutritional level. Then it is not the real income, but the state of nutritional requirement which genuinely turns out as the key factor in identifying the poverty line of an individual or individuals in a poor society. Accordingly, the poor people substantially urge to assure the required nutrition which they generally obtain from an essential good or goods attached to the survival state. The absolute approach, in this consideration, gives enormous importance to the state of nutritional needs or requirements. Thus it considers that the nutritional requirement is intrinsically valuable in order to assess the poverty line or the basic capability of an individual in a relevant situation.¹⁸⁴

- Water as nutritional requirement and individual's capability:

It is clearly figured out in the above discussion that the nutritional state is to be counted as the key element for identifying the poverty line. This accordingly indicates that there is a close relationship between the nutritional state and identifying the absolute poverty of an individual. However, the assumption sometimes leads to confusion about what is to be counted as valuable in terms of the nutritional state or the characteristic assessment of a relevant object. The suspicion can be addressed in the following sense: Should one give value to the nutritional requirement? Or; should one give value to the characteristic assessment of a relevant object in order to identify correctly the poverty line? The question can further be put in accordance to our concerning issue: Does the moral account of the individual's basic capability lie in consideration of the nutritional requirement or in the characteristic assessment

¹⁸³ Sen, 1982b, Oxford, p. 17

¹⁸⁴ Sen in Nussbaum & Sen (ed.), 1996, Oxford, p. 41

of the river's water? The answer to this question is significantly important in order to consolidate the individual's basic capability in firm moral basis. In this way, the assumption will further facilitate the strong justification that the deprivation of individual's basic capability in connection with water is to be regarded as morally blameable in accordance with the pluralist version of distributive justice. Accordingly, I shall argue that the moral accountability of the individual's basic capability rests precisely on a consideration of the nutritional requirement or value, and not on the characteristic assessment of the water. Let me first focus on the issue of the individual's capability with reference to the nutritional value of the river water. In this consideration a capability is a feature of an individual in relation to the water. This suggests that the water gives the individual nutritional value or characteristic - a fundamental requirement of his life - and so is securing the capability of functioning. Owning or having some water meets the nutritional requirement of securing the individual's basic capability to function. This implies that without having water the individual faces nutritional deficiency. Thus the nutritional characteristic or requirement represents an essential element of securing the individual's basic capability to function. This can also be interpreted in the sense that the nutritional value of water essentially correspond to the requirement of securing the individual's capability of functioning, in a particular sense (i.e. without nutritional deficiency). In this consideration, the individual's basic capability and the individual's capability conceptually makes no difference in connection with defining the functioning aspect. However, the nutritional characteristic is viewed here in the sense that lacking water equally corresponds to the individual having nutritional deficiency of securing the capability to function or securing the survival state. In this direction, lacking the required nutritional value; the individual is for instance greatly prevented from the capability of protecting the natural environment, as in our case the assumption refers to this important functioning. Thus the nutritional requirement is to be regarded as an inevitable item in the moral estimation of individual basic capability in this situation.

As it is already found, the nutritional requirement itself substantiates the moral qualification to identify properly the poverty line or the survival state of an individual. The perception similarly provides the ground to value the individual's capability as a morally important object. Thus the view of individual's capability is essentially accorded with the discussion of morality. In other words, the moral aspect of the capability approach or the individual's capability is precisely specified in the consideration of the nutritional requirement. We therefore find that the nutritional requirement provides a vital normative scale in justifying rightly the deprivation of individual's capability, which is not morally acceptable concerning the distributive state of the Ganges water, following from the informational account of moral pluralism or the capability account of distributive justice.

- Water as the characteristic assessment and the state of individual's capability:

In the above we have clearly figured out, that the nutritional state values the individual's capability as morally accountable. In other words, the water has nutritional characteristic securing the individual's capability of functioning (i.e. without nutritional deficiency) in this situation. Once it is found that the individual's capability of functioning greatly depend on the nutritional characteristic, this further tempts an individual to emphasize primarily on the characteristic assessment rather than the nutritional value of water. Hence, confusion arises out of finding two aspects of water and the moral account of the individual's capability. In finding a transparent picture of the event, it is then sensible to focus on the individual's capability in connection with the characteristic assessment of the water according to the current context of the discussion. The most crucial issue will then follow. What happens once the characteristic assessment of water applies to the state of the individual's capability? In response to this question, I shall find that the characteristic assessment defines the instrumental aspect of the individual's capability, which has no moral basis. Accordingly, the characteristic is a feature which represents an abstraction from the water. It relates to the object rather than to an individual. On the other hand, a capability, as we already know, is a feature of a person in relation to the water. In line with this account, the capability to function implies what the individual is able to do without the deficiency of nutritional characteristic (or value). Given the essential relationship between the individual capability and the nutritional characteristic, the perception then tempts an individual into focusing greatly on the characteristic assessment of the water in relation to his capability. Hence, the characteristic assessment of the object corresponds to the view of the individual's capability.

As being followed from the relationship of the characteristic assessment to the individual's capability, this accordingly indicates that the characteristic estimation of water as owned by a person do relate to his capability, as the person achieves his capability through the use of water. In another sense, the individual uses the characteristic assessment of water which implicates in achieving the capability. Thus the achievement version of individual's capability appears in the discussion of the capability approach. However, this might apparently suggest that the individual capability and the achievement version of the individual's capability are the same. Instead of such account, I shall show that they are not the same; rather they pertain to two different accounts of the capability approach or the individual's capability. Accordingly, I shall first concentrate on the key element in the former account of the individual's capability. On this consideration, the nutritional characteristic is viewed here in the fundamental sense, as being required for securing for the individual's capability to function in view of the deficiency or deprivation following from this situation. This is why the assumption sets the individual's capability in the moral sense. In reference to the latter sense,

the individual has no such deficiency. He rather possesses the characteristic aspects of the water which favours him for using them in the achievement of the capability. Thus, the individual instrumentally values the characteristic assessment of water in regard to achieving the capability. Therefore, the achievement version of the individual's capability has no moral accountability in connection with the characteristic assessment of the river's water. This is how we perceive that there is significant difference between the two versions of individual's capability in relation to the given object. Sen characterizes the difference in the following remark:

Valuing one has implications on favoring the other,
but valuing one is not the same thing as valuing the other.¹⁸⁵

In finding a precise clarification regarding the contrast between the moral aspect of individual's capability and the achievement version of individual's capability, Sen takes an example into account. I suppose it will be useful to follow the example in purpose of illustrating the discrepancy.¹⁸⁶ Accordingly, it states that if we value an individual's capability (to function) without nutritional deficiency, we would tend to favour, up to a point, the arrangement in which the individual has more water with this assumption of nutritional characteristic. This arrangement with the given perception of the nutritional characteristic is not the same thing as valuing the possession of that water as such. If, say, due to some unavoidable reasons something makes the individual unable to achieve the capability of nutritional characteristic, even though he possesses an amount of the water that would suffice for others. However, the fact that he does possess that amount of the water (or has the capability or opportunity to possess it) and command its characteristics, would not make up the loss of his capability. Given the current state of his capability, the individual will then find no use in valuing the characteristic assessment of water. The main reason is that this has no effect on the individual's capability. This assumption then implies that if we morally value a individual's capability, that is what we do value, and the possession of water with the corresponding characteristic is instrumentally and contingently valued only to the extent that it supports in the achievement of the thing that we do value, i.e., the capability. This is how we perceive the two different views, in the discussion of the individual's capability. In one aspect we find that the nutritional requirement indubitably puts the individual's capability in the moral sense, while the characteristic assessment of water serves instrumentally for the achievement of the individual's capability which has no moral basis. In the direction of the former assumption, this firmly establishes that the distributive equity must secure the individual's capability to function without nutritional deficiency. Otherwise, the distributive equity is not morally justifiable or it will be regarded as a moral shortcoming of the situation.

¹⁸⁵ Sen in Honderich (ed), 1985, p. 139

¹⁸⁶ Ibid.

Therefore, the individual capability is to be rated here as a fundamental moral norm in order to judge rightly regarding the state of the distributive equity of the Ganges water.

D. The functioning aspect of individual's capability and the notion of freedom:

Up to now we have been mainly involved with the moral justification of the individual's capability as a part of determining the distributive justice of some arrangement, following from the distributive state of the Ganges water. The assumption fairly points out that the deprivation of the individual's capability is morally not acceptable, according to informational basis of moral pluralism or the capability version of distributive justice. Having considered this perception, the capability approach further tends to focus on the functioning space of the individual capability, as being viewed as an inevitable part of examining the distributive justice of some arrangement. The capability approach then evaluates and so makes out the essential or relevant information on which the functioning aspect of the individual capability directly rely on. Accordingly, the capability approach considers the relevant information which is itself important for driving the functioning feature of the individual's capability in such situation. Hence, the capability approach identifies that the notion of *freedom* itself qualifies as essential information or value in its evaluative space, in the consideration of driving the individual's functioning in regard to the state of such distributive justice. Accordingly, the notion of freedom is integrated or equated with the functioning state of the individual's capability, or the conceptual feature of the individual's functioning aspect of capability. Thus, the freedom account of individual's functioning and the judgement of individual's capability must be considered in essentially related or integrated sense¹⁸⁷. I therefore find that it is significantly relevant to focus on the freedom account of individual functioning as an indispensable part of determining essentially and adequately his/her capability in a relevant situation. The gesture will eventually give me a normative standard in order to make an effective or a persuasive moral judgement regarding what is right and what is a wrong in the state of the morally accountable distributive arrangement of the Ganges water. However, the notion of freedom has many features in the discussion of the functioning account of the capability approach. We nevertheless find that there are two notions of freedom which are greatly attached to measure the individual's functioning account of capability.¹⁸⁸ They are as follows:

- i. Freedom in terms of what the individual's functioning can do or can be.
- ii. Freedom in terms of what the individual's functioning achieves to do or to be.

¹⁸⁷ It is worthy to notify that the individual's functioning and the capability is closely related, but they are not the same thing.

¹⁸⁸ See, Sen in Nussbaum & Sen (ed.), 1996, p. 34-35

In reference to the given two aspects of freedom, I shall show in the following discussion that the former sense of freedom is inextricably consistent with the moral version of individual's capability, and so is morally accountable. In this direction, the incentive will further permit to argue that if an individual cannot function freely, this equally justify that his capability of functioning is significantly deprived following from the consequent assessment of distributive justice of the river's water. On the other hand, I shall find that the latter aspect of freedom is instrumentally related to the individual's functioning achievement and so is not to be viewed in the space of morality. In this line of argument, I shall further show that this individual freedom, or freedom in such relevant situation, does not assure equal functioning achievement in consideration to others.

- i. Freedom in terms of what the individual's functioning can do with water:

In the above discussion we have seen that the capability approach evaluates the freedom account of individual functioning in two different perspectives. In a way each aspect has a corresponding relation to the notion of freedom. Accordingly, the informational account of the capability approach makes further attention to which consideration of freedom is to be directly relevant to what virtually leads to an individual's functioning to move about. This implies that the individual is normally or actually associated with such functioning and so it has implication for the capability as well. Hence the assumption permits me to focus on the former sense of freedom in terms of what individual functioning can do. The key issue following from the given perception is: How can this freedom qualify as morally important for the space of individual functioning? Accordingly, this sort of freedom sees individual functioning not in terms of what amount of water or good he posses, nor how much he gets out of using it. This freedom rather specifies primarily individual functioning in terms of what he can do with water without deficiency of nutritional characteristic. The freedom, in such criterion, considers individual's functioning as a natural candidate for his capability. Accordingly, this freedom corresponds directly to the moral feature of individual's capability, as it sees individual functioning as inclusive or as an inevitable part of his capability. In line with this account, this freedom then deserves to be an object of morally accountable value. Accordingly, this freedom is viewed as a morally important value in the discussion of the capability approach. Once this freedom is morally valued, the individual functioning itself serves as an object of value, according to the moral perspective of the individual's capability. In this consideration, the individual functioning is morally accountable. Thus, this freedom considers such individual functioning as essentially consistent with the moral version of capability or the pluralist account of the individual's capability.¹⁸⁹ Therefore, this freedom

¹⁸⁹ See, Sen in Honderich (ed.), 1985, p. 138-139, and Sen in Nussbaum & Sen, (ed.), 1996, p. 44.

qualifies as a fundamental normative standard in order to measure properly the individual's functioning in terms of what he can do freely in a relevant situation.

- Morally accountable freedom connected to water and interpersonal functioning:

Given the normative criterion of freedom to measure the individual's functioning in terms of what he can do freely, driving such freedom into individual functioning largely depend on various factors. This, for example, includes personal characteristics, social arrangement and other relevant issues as well. Hence, the freedom account of the individual's functioning can be brought into evaluating two different individuals or an interpersonal functioning situation involved in the state of the morally assessed distributive arrangement of the river's water. Accordingly, it follows that one of them, for instance India who has direct access to the water, can do many things freely. On the other hand, the other individual, for instance Bangladesh is being identified as deprived of what he/she can do freely, due to natural cause. That is; he has no such access and so stands in a disadvantageous position in relation to owning or having water. This virtually identifies him as an unfortunate or disabled individual in relation to water.¹⁹⁰ It seems that Bangladesh accepts easily a situation of whatever might relate to his survival. But the fact that this individual is in a disadvantageous situation and so has less freedom of functioning than the former individual's functioning means that he cannot do many things in relation to water. The fact that this disadvantaged individual is simply adjusting to the necessity of continuing survival, does this give ground not to be given special help to combat that disadvantage? Does the unfortunate individual give up managing without the help he could otherwise claim from the society, or a third party, because of his ability to adjust to the situation? The fundamental matter here lies in the distributive arrangement which must permit his freedom account of functioning so that he can do many things in relation to the former individual. Otherwise, this distributive arrangement is morally not justifiable according to the freedom account of individual's functioning.

Following from the above discussion, the moral account of freedom then finds that it is essential to focus particularly on such distributive arrangement in the sense of a choice situation. Hence, this freedom account considers the choice situation as essentially relevant to assess individual functioning in regard to the distributive arrangement of water. According to the freedom account of individual functioning, the individual must have open possibilities as opposed to the particular one he happens to choose. I shall find here, that the disadvantageous individual's freedom does not enjoy such opportunity of the choice situation, instead he is accepting this particular or the same distributive arrangement in realization of his continuing

¹⁹⁰ I consider certain notion of the interpersonal functioning assessment according to the moral sense of freedom, from the following source: See, Sen in Honderich (ed.), 1985, p. 140-141

survival. Accordingly, let me now consider two incidents regarding the judgement of this arrangement. In one case, it might be the event that the disadvantaged individual would not accept the arrangement, as it would not make any difference on his functioning. In another case, it could be the incident that the disadvantaged individual, had he been a privileged individual, would still have chosen not to accept the arrangement. The reason is that it could certainly be the case that this arrangement would not have made any difference to his functioning, had he been a privileged individual. The two cases appear as the same, and so the disadvantageous individual need not be seen as deprived. But from the view point of this freedom, the disadvantaged individual and the privileged individual have different functioning in terms of one being able to do many things that the other cannot. This fact must have relevance according to this freedom account of the choice situation. It is therefore not necessary that they have to choose to accept the same distributive arrangement. Once the disadvantageous individual happens to choose to accept this particular agreement, it implies that he enjoys less freedom to choose from the possibilities, which ultimately deprives his functioning in terms of what he can do in connection to the water. In other words, Bangladesh has not enjoyed the opportunity to choose freely from another option or options in the choice situation, but decides to accept this particular arrangement in realization of the continuing survival. Thus the decision of accepting the same distributive agreement in the feature of the choice situation is the cause for the deprivation of his functioning in terms of what he can do freely in connection to the river's water. Therefore, deprivation result from the choice situation or the decision is morally not acceptable, according to this freedom account of the individual functioning.

- ii. Freedom in terms of what individual functioning achieves from water:

In the preceding section, we have mainly illustrated the moral based freedom account of individual functioning. According to the criterion of the considered freedom, we have perceived that Bangladesh does not enjoy sufficient freedom in the choice situation which is the reason for depriving his functioning achievement in relation to the water. However, the capability approach is not only concerned with such freedom of individual's functioning, but it also makes room for another type of freedom in consideration of individual functioning. Hence, the instrumental sense of freedom takes place in terms of achieving individual's functioning in the discussion of the capability approach or the capability account of distributive justice. In this regard, I shall first show that this instrumental sense of freedom has no direct or moral importance to the evaluative space of the capability approach, or the capability account of distributive justice. Thereafter, I shall consider other relevant matters of this freedom.

The instrumental sense of freedom in terms of individual's functioning achievement indicates that an individual uses this freedom to choose an object among a set of options which is useful for his functioning achievement in term of doings and beings as a part of living. This functioning achievement can be characterized as the individual's functioning vector which is normally viewed within his or her reach. The functioning achievement of an individual can be regarded in the following terms: states of existence, being well-nourished, being deficient of nourishment and so on. Accordingly, the instrumental freedom based individual functioning achievement does not restrict one's life in a particular sense. In this account, with this type of instrumental freedom the individual actually chooses to accept a distributive agreement or deal as an object of achieving individual functioning, which provides him with many things to do or to be. Thus according to this account of freedom the individual decides to accept such distributive arrangement as a suitable object consistent with the achievement of individual's functioning. Accordingly, an individual finds sensible reason to value this freedom as a purpose of attaining such objective. Thus this freedom is valued in the instrumental sense.¹⁹¹ Therefore, this instrumental sense of freedom has no moral importance in the morally accountable evaluative space of the capability approach.

- Instrumental sense of freedom to water and interpersonal functioning achievement:

Given the relationship between freedom and a distributive arrangement as means to achieve the individual's functioning vector, the importance of such freedom however depends on an assessment of various situations in which different individuals use this freedom as part of achieving the functioning. Hence, I consider that this instrumental sense of freedom is greatly consistent with the estimation of interpersonal functioning achievement related to the distributive arrangement of the river's water. In this reading, I shall in the following first show that this freedom does not guarantee equal functioning achievement of one individual in relation to another. Thereafter I shall show that this instrumental account of freedom in the assessment of the interpersonal functioning achievement directly influence or effect on the morally accountable evaluative space of the capability approach. The assumption will further give me justification to insist that this functioning achievement or instrumental version of individual's freedom deserves not to be ignored in the moral sense of the capability approach, or informational pluralist account of distributive justice. I shall primarily consider these objectives in the following discussion.

¹⁹¹ I consider the perception regarding the instrumental sense of freedom from the following text: See, Sen in "Philosophy and Public Affairs", spring 1990, vol. 19, no. 2, p. 113-116. See also Sen in "The Journal Of Philosophy", April 1985, vol. LXXXI, no. 4, p.197-198.

In accordance with the given objectives, let me now focus on the event that the instrumental sense of freedom does not guarantee equal interpersonal functioning achievement in relation to the river's water. To illustrate this I consider once again the example from the poverty study, but according to the current flavour of the discussion.¹⁹² This states that two individuals have an identical and normal functioning vector.¹⁹³ They can be identified as "A" and "B". Accordingly, individual "A" is in possession or owns the water and so enjoys the freedom to command on using it. He then has adequate nutritional achievement from it and so is well-nourished. This assumption can be characterized as India's position with regard to the distributive arrangement of the Ganges water. Due to some persuadable reasons, he/she decides not to attain nutrition and undergoes consequently the suffering of under-nourishment. On the other hand, individual "B" is suffering from under-nourishment because he/she lacks the means of freedom to command the water and so is deprived from the nutritional achievement of the water. This perception can be characterized as the situation of Bangladesh regarding the distributive arrangement of the Ganges water. In terms of the misery caused by the suffering, we perceive that there is no difference between A's experience and B's. Even though it is plausible to say that they have the same level of the functioning achievement, in terms of being under-nourished, miserable and so on, nonetheless there lies an important difference between the two cases. This highlights the comparison of freedom between the two individuals in pursuit of achieving functioning. Individual "A" has sufficient means of freedom to achieve the functioning vector and so he chooses straight forwardly an alternative life style which is not possible for individual "B". This is a significant difference lying in this comparative assessment of instrumental freedom, which does not give equal opportunity to choose the functioning achievement between the two individuals, although it is not necessary a difference between the actual functioning levels achieved by the two. The possibility of suffering is open to both, but choosing to abstain from the nutritional achievement is only open to "A". In another words, well-nourished "A" or India, has the opportunity to choose another life-style as a part of living, whereas poverty-stricken or under-nourished "B" or Bangladesh, does not enjoy such opportunity. Thus, the instrumental based freedom does not guarantee Bangladesh to achieve equal opportunity to choose another life style. This assumption actually discontents with the norm of this freedom which states that an individual has opportunity to choose one among several options as a purpose of achieving the functioning vector leading his life. Moreover, the result of such unequal instrumental sense of freedom in the judgement of interpersonal functioning achievement, virtually force "B" into the state of suffering from under- nourishment. Indeed,

¹⁹² The example has been considered in the following space of this chapter: See, p.134-135.

¹⁹³ I have borrowed certain aspect regarding the assessment of the interpersonal functioning achievement in the light of the instrumental sense of freedom from Sen. This has been taken from the following source: See, Sen in "The journal Of Philosophy", April 1985, vol. LXXXII, no. 4, p. 200-2002.

the notion directly corresponds to the poverty discussion or the basic capability. Thus, the unequal aspect of the instrumental freedom reflected in the assessment of interpersonal functioning achievement straightforwardly influence on the moral aspect of individual's capability. Therefore, I am not wrong to insist that this instrumental sense of freedom should not be neglected by the morally accountable evaluative space of the capability approach or by the informational pluralist account of distributive justice.

Conclusion:

The main purpose of this chapter is to examine closely from a normative point of view the accusation that injustice appears from implementing the just distributive agreement of the Ganges water. In this connection I have considered a combined notion based on the capability and the functioning view in determining the distributive justice of some arrangement. The notion has been taken according the view point of Sen. Accordingly I have found the following: 1. Both the general discussion of the capability approach and the functioning view as well as its consideration from the perspective of individual's situation, have relevance to assess the distributive justice of some arrangement. 2. The informational account of functioning and the capability approach is a combined moral principle. They are actually a part of the informational account of moral pluralism. The justification of moral pluralism is viewed in its right assessment of each relevant value which constitutes the moral structure of distributive justice. 3. The nutritional state of water secures individual's capability to function without deficiency. The deprivation of such state is morally not acceptable. This identifies that the injustice lies in the distributive justice of some arrangement. 4. The freedom account of functioning shows that Bangladesh is deprived of an equal aspect of freedom. This further justifies that injustice lies in the considered distributive arrangement. In other words, significant scepticism lies in considering the rightness of distributive justice. I therefore consider that uncertainty still remains in solution of the water conflict between India and Bangladesh. Uncertainty is equally involved with the safety of the natural environment.

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